

CENTRAL BANK OF JORDAN

# GREEN FINANCE STRATEGY

2023–2028



الصندوق الائتماني متعدد  
المانحين للنمو في الأردن  
JORDAN GROWTH MULTI DONOR TRUST FUND



وحدة دعم تنفيذ  
الإصلاحات الاقتصادية  
REFORM SECRETARIAT





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# ABBREVIATIONS

<b>ACC</b>	Agricultural Credit Corporation
<b>ASE</b>	Amman Stock Exchange
<b>BCBS</b>	Basel Committee on Banking Supervision
<b>BIS</b>	Bank of International Settlements
<b>CAMELS</b>	capital adequacy, asset quality, management, earnings, liquidity, and sensitivity
<b>CARMELS</b>	capital adequacy, asset quality, reinsurance liability, adequacy of claims and actuarial, management soundness, earnings, liquidity, sensitivity
<b>CBJ</b>	Central Bank of Jordan
<b>CCDR</b>	Country Climate and Development Report
<b>CCRGFD</b>	Climate Change Risk and Green Finance Division
<b>CIBAFI</b>	General Council for Islamic Banks and Financial Institutions
<b>CRA</b>	climate risk assessment
<b>DRF</b>	disaster risk finance
<b>EBA</b>	European Banking Authority
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>ERC</b>	emission reduction credit
<b>ERPA</b>	emission reduction purchase agreement
<b>ESG</b>	environmental, social, and governance
<b>ESRB</b>	European Systemic Risk Board
<b>EU</b>	European Union
<b>EWS</b>	early warning system
<b>FI</b>	financial institution
<b>GBP</b>	green bond principles
<b>GVA</b>	gross value added
<b>IAIS</b>	International Association of Insurance Supervisors
<b>ICAAP</b>	internal capital adequacy assessment process
<b>IFC</b>	International Finance Corporation
<b>ISSB</b>	International Sustainability Standards Board
<b>JD</b>	Jordanian dinar

<b>JREEEF</b>	Jordan Renewable Energy and Energy Efficiency Fund
<b>JSC</b>	Jordan Securities Commission
<b>JLGC</b>	Jordan Loan Guarantee Corporation
<b>LGD</b>	loss given default
<b>LTS</b>	long-term low-carbon development strategy
<b>MFI</b>	microfinance institution
<b>MOENV</b>	Ministry of Environment
<b>MOF</b>	Ministry of Finance
<b>MRV</b>	monitoring, reporting, and verification
<b>MSME</b>	micro-, small, and medium enterprise
<b>NDC</b>	nationally determined contributions
<b>NGFS</b>	Network for Greening Financial Systems
<b>NPL</b>	nonperforming loans
<b>PCGS</b>	Public Credit Guarantee Scheme
<b>PD</b>	probability of default
<b>ORSA</b>	own risk and solvency assessment
<b>RBCF</b>	results-based climate finance
<b>ROCA</b>	risk management, operational controls, compliance, asset quality
<b>SBFN</b>	Sustainable Banking and Finance Network
<b>SIF</b>	Sustainable Insurance Forum
<b>SLL</b>	sustainability linked loan
<b>SME</b>	small and medium enterprise
<b>SREP</b>	supervisory review and evaluation process
<b>SRI</b>	socially responsible investing
<b>SSIF</b>	Social Security Investment Fund
<b>TCFD</b>	Task Force on Climate-related Financial Disclosures
<b>tCO<sub>2e</sub></b>	metric ton of carbon dioxide equivalent
<b>VCMs</b>	voluntary carbon markets





# EXECUTIVE SUMMARY







**In light of intensifying climate change risks, the Central Bank of Jordan (CBJ) is stepping up to lead climate-responsive financial sector development and to become one of the national champions and leading central banks in the region for climate risk management and green finance mobilization.**<sup>1</sup> This strategy marks a

significant milestone in Jordan's climate change agenda by bringing in a critical new component: greening the financial sector. Climate change is already evident in Jordan and can become a growing threat to the soundness and safety of financial institutions (FIs) and stability of the overall financial system. Since the 1960s, annual maximum temperatures in Jordan have increased by 0.3–1.8°C, and minimum temperatures have risen by 0.4–2.8°C across various climate regions. The annual precipitation has declined by 5–20 percent, depending on the region.<sup>2</sup> CBJ, through a comprehensive approach toward greening the financial sector, aims to address climate-related financial risks (figure ES.1). This strategy is essential in helping CBJ implement its mandate of ensuring financial stability. A core pillar of the strategy is to facilitate mobilization of green finance from the private sector, which will help increase the sustainability of the financial system and support Jordan's efforts to meet its international climate change commitments.

**The vision of this strategy is to transform Jordan's financial sector into a leading force for green finance mobilization and enhanced resilience against climate-related and environmental risks while also enabling Jordan to become a regional leader in sustainable finance.** To realize this vision, CBJ will closely collaborate

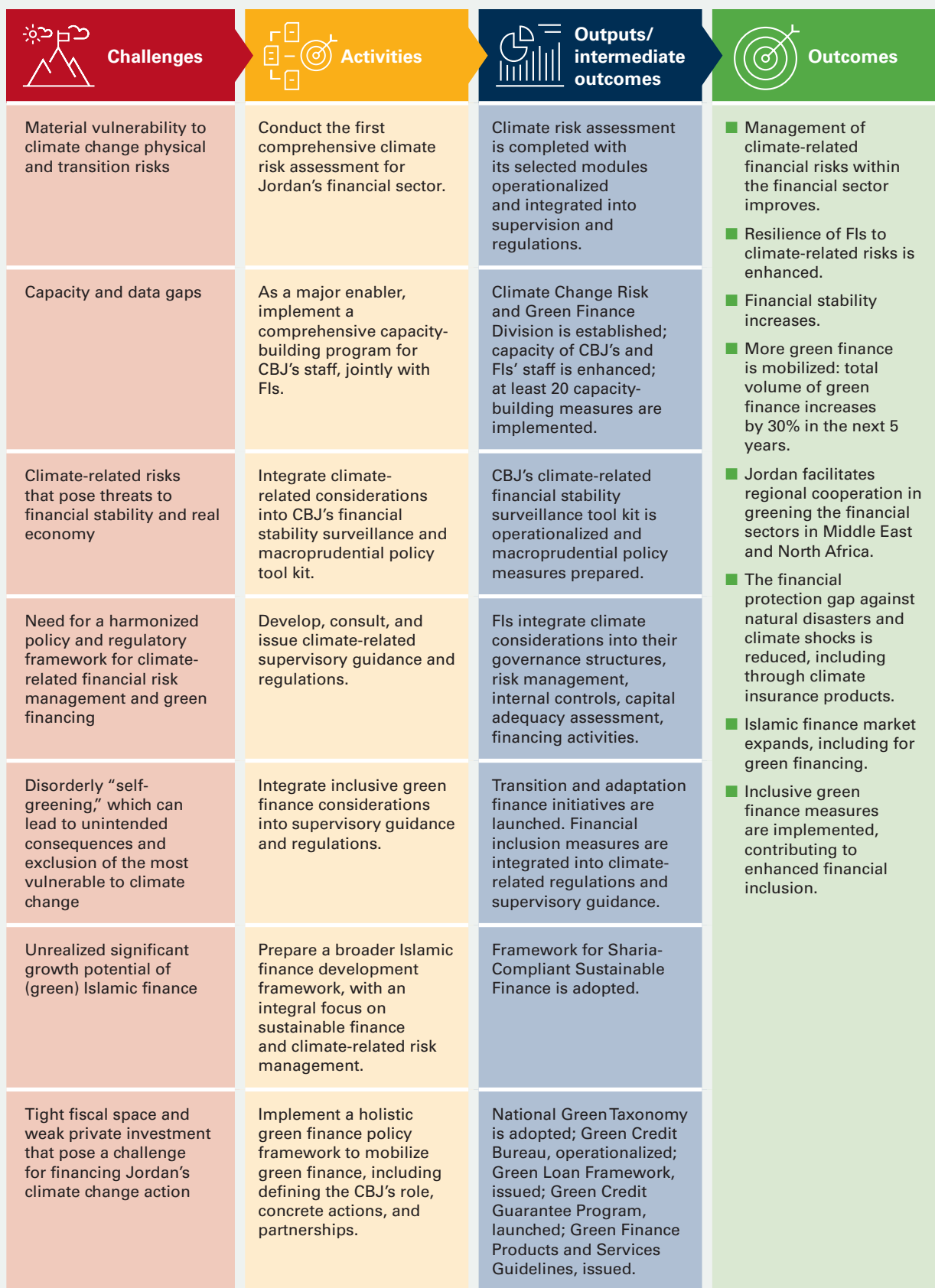
with stakeholders across the financial sector and beyond (ministries, international bodies, scholars, and so forth). Specifically, CBJ will guide FIs in integrating climate-responsive and environmental considerations into all aspects of financial decision-making, including their corporate governance structures, risk management and internal controls, disclosure and reporting, and green financing. It is important to highlight, however, that for the financial sector to be able to effectively drive the transition toward a more resilient and greener economy, broader national green policies will play a crucial role, especially in generating demand for green financing.

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1 For the sake of simplicity, the term 'climate-related' in this strategy typically refers to a broader concept that covers both climate-related and nature-related risks, opportunities, considerations, and so on.

2 World Bank Group, Jordan Country Climate and Development Report (CCDR series, Washington, DC: World Bank, 2022), <http://hdl.handle.net/10986/38283>.

**Figure ES.1: A Transformation Road Map: Strategy's Theory of Change**



Source: Original figure for this strategy.

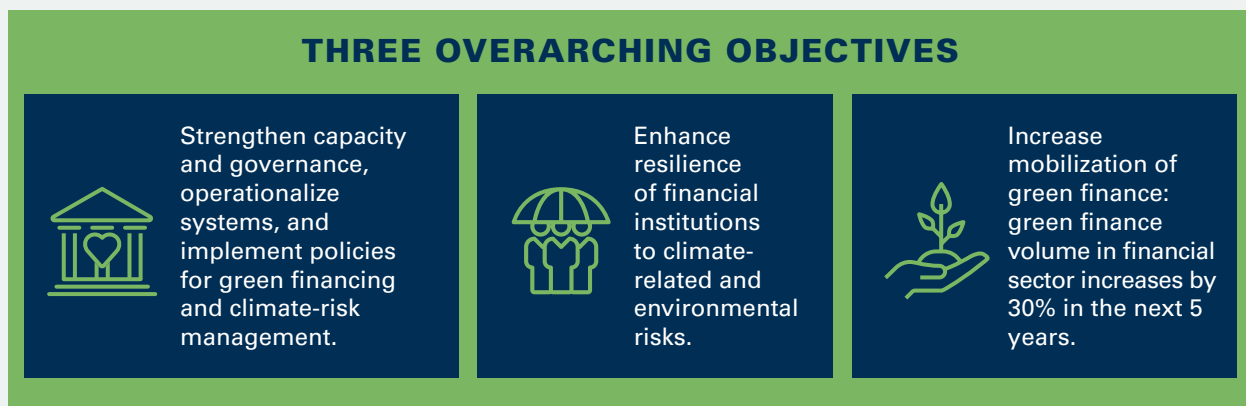


## VISION OF THE STRATEGY

To transform Jordan's financial sector into a leading force for green finance mobilization and enhanced resilience against climate-related and environmental risks while also enabling Jordan to become a regional leader in sustainable finance.

**The strategy has three overarching objectives** (figure ES.2): (a) to strengthen capacity and governance, operationalize systems, and implement policies for green financing and climate risk management, leading to (b) enhanced resilience of the financial sector to climate-related and environmental risks and (c) increased mobilization of green finance. CBJ will aim to achieve these broad objectives through a number of intermediate results, which include (a) coleading the development of the National Green Taxonomy, (b) conducting the first comprehensive climate risk assessment (CRA) for the financial sector in Jordan, (c) implementing a comprehensive capacity-building program, (d) issuing supervisory guidance and regulations assisting FIs' efforts to integrate climate-related considerations into their governance structures, creating risk management frameworks, developing green finance products and services, and more. All of this will support aligning Jordan's financial sector with the goals of the Paris Agreement. This strategy will also inform the new National Financial Inclusion Strategy that CBJ is preparing.

**Figure ES.2: Overarching Objectives for CBJ's Strategy**



Source: Original figure for this strategy.

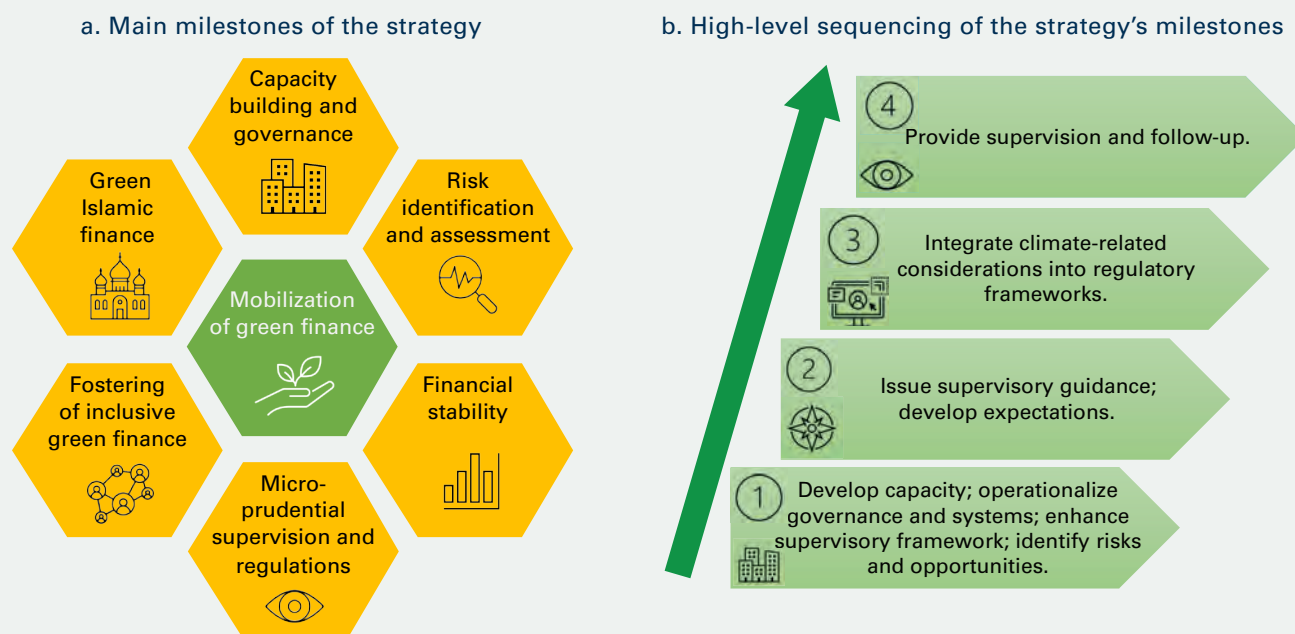
**The milestones outlined in this strategy are closely aligned with CBJ's mandate (figure ES.3).** The majority of the objectives, and the actions needed to achieve them, can be implemented by CBJ as a financial regulator and supervisor, as well as by the supervised FIs. However, CBJ recognizes that the instruments that central banks and supervisors have at their disposal cannot substitute for the many areas of interventions that are needed to transition to a low-carbon economy. This highlights the important role other players need to play like the government, the private sector, and nongovernmental organizations (NGOs). CBJ will look at such interventions, understand their impact, and adjust its own policies.



**CBJ will collaborate closely with other stakeholders and authorities: beyond the core mandate of monetary policy and prudential supervision, CBJ can act as a catalyst for enhanced green finance and climate risk management capacity and partnerships.** The strategy acknowledges the importance of partnerships with organizations such as Jordan Securities Commission (JSC), Jordan Loan Guarantee Corporation (JLGC), Ministry of Environment (MOENV), and Ministry of Finance (MOF) to achieve critical results such as the development of a National Green Taxonomy, the launch of a financially sustainable green credit guarantee program, facilitation of blended financing structures, and implementation of green capital market solutions. Achieving these objectives will require a coordinated effort by all parties involved. In addition, to facilitate interinstitutional coordination, CBJ will aim to become a core member of the National Climate Change Committee.

**CBJ recognizes that the greening the financial sector actions should come as an integral part of a broader package of measures linked to CBJ’s supervisory and regulatory framework** (for example, further developing and implementing Pillar 2 methodologies and increasing supervisory capacity). Moreover, greening the financial sector actions should be implemented by minimizing potential conflict between the CBJ’s core regulatory and supervisory mandates. More specifically, pursuing enhanced green financing should not undermine risk management by financial institutions.

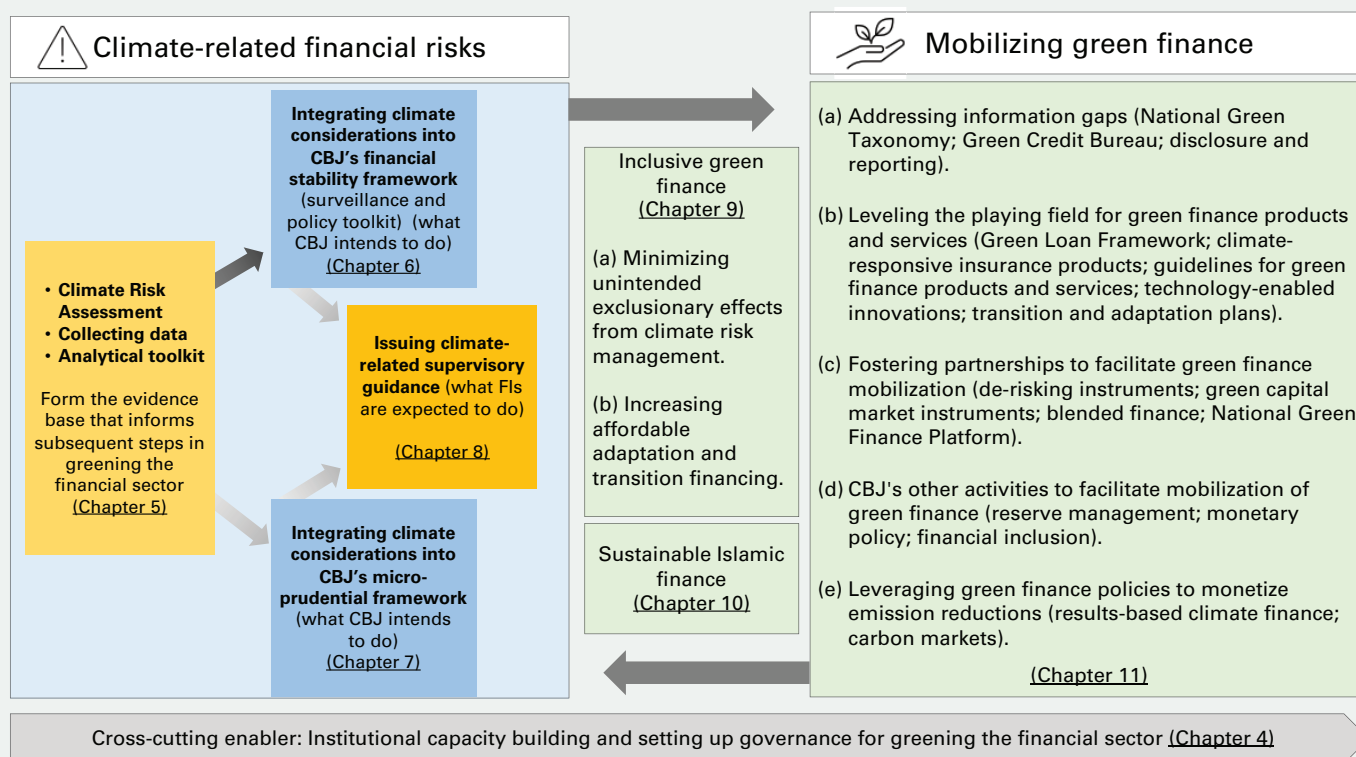
**Figure ES.3: Milestones and Sequencing of CBJ’s Strategy**



Source: Original figure for this strategy.

**This strategy encompasses the entire spectrum of measures for greening the financial sector, which will be implemented gradually and will range from capacity building and CRA to climate-related supervisory guidance and regulations, inclusive green finance, Islamic green finance, and mobilization of financing for climate-responsive investments.** The strategy is underpinned by two core principles: sequencing and proportionality. Initially, the strategy will prioritize the banking sector, followed by insurers and microfinance institutions (MFIs). Furthermore, the proportionality principle will apply across all three of those sectors, with the adoption of new requirements being contingent upon the FI's size, complexity, and risk appetite. By adopting this approach, CBJ can prevent putting excessive pressure on FIs that have limited financial and technical capabilities and are unlikely to pose a systemic risk to financial stability. Overall, the strategy is developed around two major pillars: risk (managing climate-related financial risks) and opportunity (mobilizing green finance), which are interlinked (figure ES.4).

**Figure ES.4: Key Components of the Strategy and Their Interlinkages**

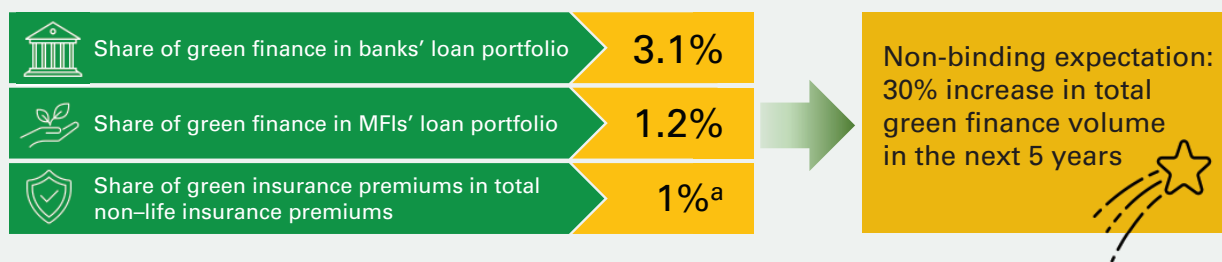


Source: Original figure for this strategy.  
 Note: CBJ = Central Bank of Jordan.

**At the end of 2021, CBJ conducted a survey to assess the current status of climate-related risk management and green finance in Jordan's banking sector.** The findings indicate that while most banks acknowledge the significance of climate-related risks, only a few of them have the necessary tools and capabilities to effectively manage and mitigate these risks. Many banks have yet to include green finance in their strategic plans and corporate governance, and to consider green finance elements when making credit decisions. On the positive side, the vast majority of banks have implemented climate-responsive practices in their own operations (for example, renewable energy) and have a positive view on issuing green bonds in Jordan. The banking sector already offers some products aimed at supporting sustainable development; however, progress is not even among various banks.

**CBJ requested that banks, MFIs, and insurance companies conduct (during April and May 2023) a guided self-assessment of green financing in their portfolios.** This assessment provided a preliminary estimate of the current proportion of green finance in the FIs’ balance sheets. The results showed that the proportion of green finance in the banking sector was approximately 3 percent, while it was around 1 percent in the microfinance sector and 1 percent in the insurance sector. In the banking sector, the estimated green finance share was scattered, ranging from 0.07 to 22 percent. CBJ will revise these estimates after a more comprehensive assessment is conducted following the adoption of Jordan’s National Green Taxonomy. CBJ would consider it a good outcome if total volume of green financing increases by 30 percent in the next five years, by the end of 2028 (figure ES.5). However, this is by no means a binding target, as an actual dynamic of green financing will also depend on the demand-side measures that go beyond CBJ’s mandate.

**Figure ES.5: Estimated Share of Green Financing in Balance Sheets of Banks, MFIs, and Insurers, and a Nonbinding Expectation for Green Financing Volume**



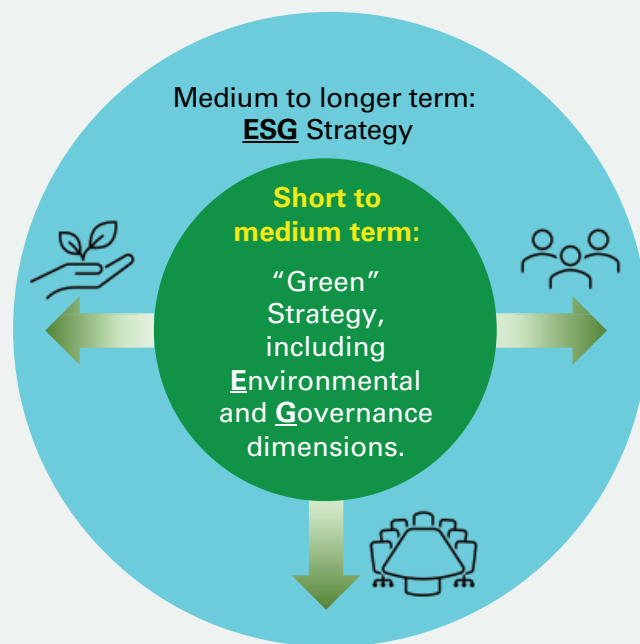
Source: Original figure for this strategy.

Note: MFI = microfinance institution.

a. For the insurance sector, the share indicates the proportion of total non-life insurance premium covering catastrophes and climate-related natural hazards.

**Following a gradual approach, in the medium term CBJ aims to broaden the scope of this strategy to become a “sustainable finance” strategy that encompasses the complete range of environmental, social, and governance (ESG) factors.** CBJ plans to revise its supervisory guidance to align with this expanded approach, such as by releasing ESG guidelines for Jordan’s financial sector. Note, however, that climate-related and environmental (E pillar) and governance (G pillar) considerations already have a strong and extensive presence in this strategy. Social factors are most visible through the inclusive green finance lens. Yet further work will be needed to identify financial risks and opportunities stemming from social factors in Jordan, especially because climate risk drivers and environmental degradation are intrinsically connected to increasing social risks. Therefore, in the longer term, CBJ will explore ways to guide the financial sector in incorporating social risks and ESG concepts more comprehensively into Jordan’s financial sector’s overall risk management, operational, and financing framework (figure ES.6).

**Figure ES.6: Potential Expansion of the CBJ’s Green Finance Strategy**



Source: Original figure for this strategy.  
Note: ESG = environmental, social, and governance.

## CAPACITY BUILDING AND GOVERNANCE

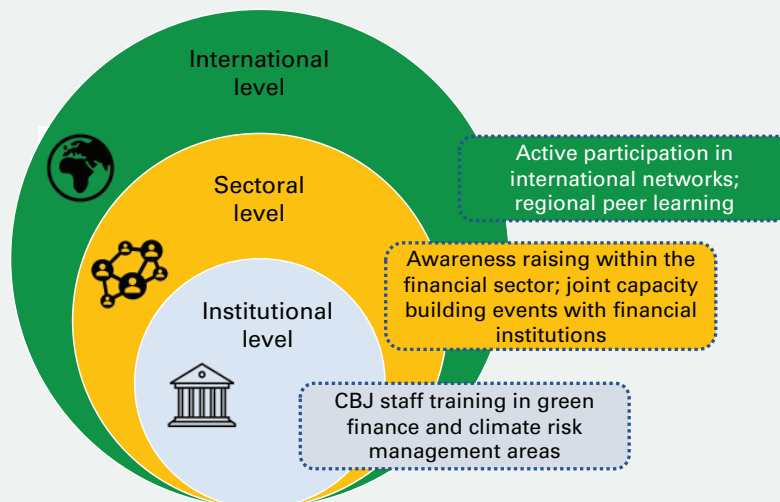
**Greening the financial sector is a relatively new field, both globally and in Jordan, and thus central banks, financial regulators, supervisors, and FIs face significant capacity-building needs.** To support the implementation of the strategy, CBJ will establish the Climate Change Risk and Green Finance Division as part of the Financial Stability Department, which will cover both the climate risk-related and green finance issues. This division will be responsible for leading the strategy’s implementation, including broad cross-sectional coordination within CBJ to ensure consistency of actions taken by different institutional units of CBJ.

**To ensure effective implementation of the strategy, it is essential to enhance the human and technical capacities of CBJ and FIs.** CBJ will develop and implement a comprehensive capacity-building program, comprising three layers: institutional, sectoral, and international, each aimed at addressing capacity gaps at that level (figure ES.7, panel a). This program is seen as a cross-cutting enabler of all other actions and their sustainability in greening the financial sector. To ensure that the necessary skills and knowledge are in place, CBJ will split the capacity-building measures into three categories—foundational, advanced, and pro level—that will reflect increasing levels of sophistication. The program will consist of a series of collaborative training events, part of which could be attended jointly by CBJ’s staff and FIs (figure ES.7, panel b). On an international level, CBJ will seek to increase its involvement in networks focused on mainstreaming climate considerations in the central banking and financial regulatory ecosystem (Network for Greening the Financial System, Sustainable Banking and Finance Network, Sustainable Insurance Forum, and others) and to strengthen peer learning relations with central banks and financial regulators in the Middle East and North Africa region and beyond.



**Figure ES.7: Capacity Building Program**

a. Key layers of CBJ's capacity-building program



b. Indicative topics for CBJ's capacity-building program

Climate-related risk management		Green finance	
Climate change risks to financial sector: key metrics and models	Climate change in Jordan: macro-financial perspective	Global trends and best practices in green finance mobilization	Carbon markets and carbon finance
Integration of climate-related risks into prudential supervision	Assessment of climate-related risks; data collection and analysis	Green taxonomies; public disclosure and reporting (ISSB, TCFD)	Green bonds, other capital market instruments
Disaster risk management practices and climate insurance	Climate stress testing and scenario-based approach	Green loans, de-risking tools, other green finance products	Green financial inclusion; Green Islamic Finance
Global standards for risk management (BCBS, IAIS, CIBAFI)	Development of climate-responsive financial regulations	International green finance frameworks (Green Loan Principles)	Innovative technology-based solutions for green finance

Source: Original figure for this strategy.

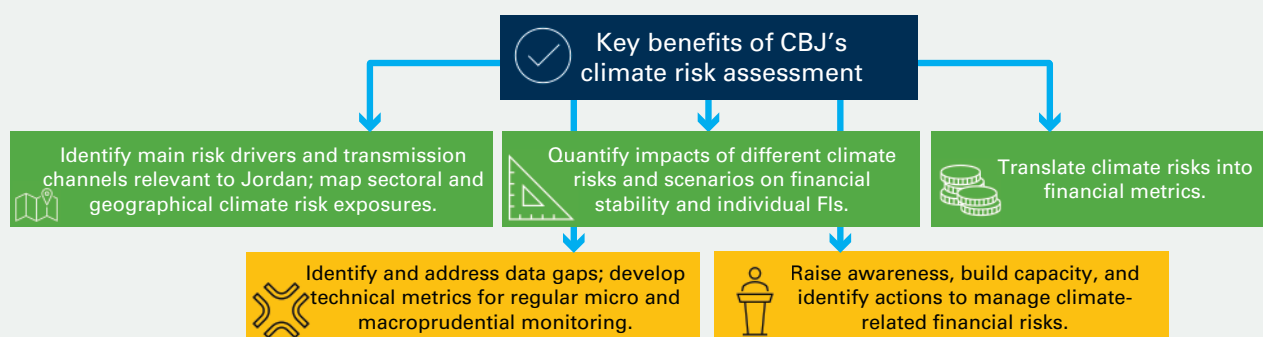
Note: BCBS = Basel Committee on Banking Supervision; CIBAFI = General Council for Islamic Banks and Financial Institutions; IAIS = International Association of Insurance Supervisors; ISSB = International Sustainability Standards Board; TCFD = Task Force on Climate-related Financial Disclosures.

# IDENTIFICATION AND MANAGEMENT OF CLIMATE-RELATED RISKS

**Assessing the impact of climate physical and transition risks on the financial system is one of the most urgent and prominent issues for central banks and financial regulators.** In Jordan, conducting a CRA for the financial sector in cooperation with the World Bank will be one of the initial steps toward greening the financial sector. CBJ is committed to ensuring that every action taken to green Jordan’s financial sector is evidence based and grounded in a thorough understanding of climate change risks and opportunities. Conducting a CRA will improve understanding and quantify the impact of climate physical and transition risk factors on financial stability and the safety of FIs under various climate scenarios (figure ES.8). Once CBJ completes a comprehensive CRA, selected modules will be integrated into a regular macroprudential and microprudential supervision and financial stability analytical tool kit. To the extent possible and on the basis of data availability, the CRA will cover the banking sector, insurance companies, and MFIs and will address both physical and transition risks.

**Addressing data gaps is a critical step in greening the financial sector.** CRA will be instrumental for identifying existing data gaps and operationalizing systematic collection of climate-related information. This will require broad interinstitutional coordination. As an example, in Malaysia, the Joint Committee on Climate Change, which includes both regulators and industry participants, developed a climate data catalog (supported by the World Bank), which involved extensive consultation about and validation of data in conjunction with other ministries (for example, Ministry of Natural Resources, Environment and Climate Change). In Jordan, more broadly, the activities linked to implementing a systematic data collection could also entail integration of natural capital into national and corporate systems of accounting.

**Figure ES.8: Key Benefits of a Climate Risk Assessment for Jordan’s Financial Sector**



Source: Original figure for this strategy.

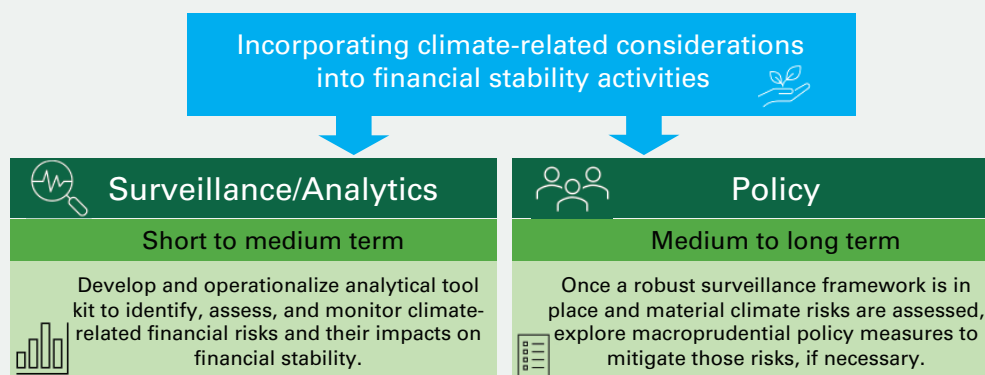
Note: CBJ = Central Bank of Jordan; FI = financial institution.

# INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S FINANCIAL STABILITY FRAMEWORK

**Climate-related financial risks can pose a systemic threat to financial stability beyond their impact on individual institutions.** In Jordan, there are several significant transmission channels through which climate change can affect financial stability. Given the size of Jordan's financial sector, which accounts for more than 180 percent of the gross domestic product, climate change risks, such as an increase in nonperforming loans due to severe droughts, can create strong feedback loops with the real economy, leading to reduced investment financing. Banks are significant investors in government securities, which implies that if climate change exacerbates Jordan's already high levels of public debt, it could indirectly expose banks to financial risks by diminishing the value of collateral they could use to obtain liquidity.

**Integrating climate-related considerations into CBJ's financial stability framework involves two primary areas: analytics and policies (figure ES.9).** CBJ will take a gradual approach, with (a) a short- to medium-term focus on incorporating climate-related factors into a financial stability surveillance tool kit and processes and (b) a medium- to longer-term focus on reviewing the macroprudential policy tool kit to explore measures that CBJ could activate to mitigate material climate-related systemic risks, if necessary. The first CRA will set the stage for integrating climate-related financial risk analysis into the CBJ's macroprudential surveillance tool kit. Once the surveillance tool kit is operational, CBJ will closely monitor the emerging international good practices related to climate-responsive macroprudential policies. CBJ aims to see that any adjustments in capital or noncapital types of macroprudential measures are based on evidence and carefully designed to achieve the intended financial stability objectives and, to the extent possible, to minimize unintended consequences such as reduced availability and affordability of transition and adaptation financing.

**Figure ES.9: Two Focus Areas for CBJ's Climate-Related Considerations in the Financial Stability Framework**



Source: Original figure for this strategy.

# INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S MICROPRUDENTIAL FRAMEWORK

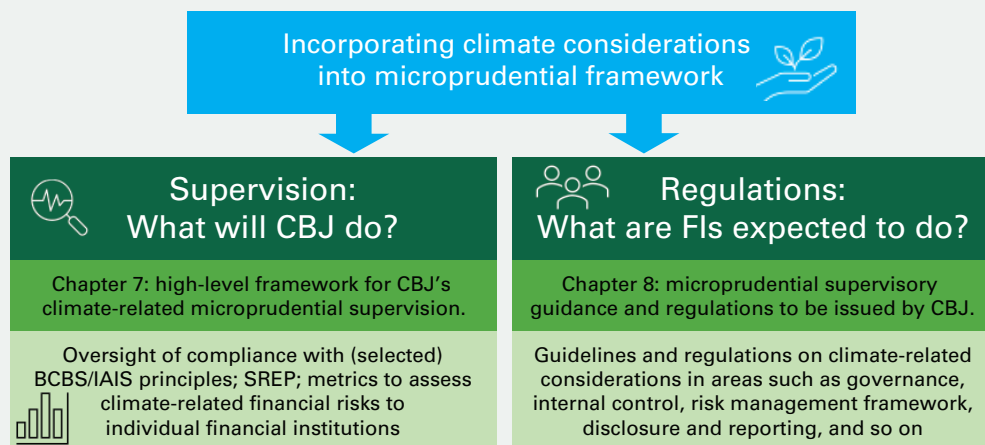
**Against the backdrop of growing physical and transition risks to FIs, there is a case for CBJ to integrate considerations of climate-related financial risk drivers into microprudential supervisory and regulatory frameworks.** The primary objectives of this integration are (a) to assess the impact of these risks on the soundness and safety of supervised FIs and (b) to ensure that FIs have sufficient loss absorption capacity and are appropriately monitoring, managing, and mitigating material climate-related financial risks. To accomplish this, CBJ will engage in a market dialogue with FIs to discuss and agree on a timeline and extent for implementing climate-related international standards such as Basel Committee on Banking Supervision principles (for the banking sector) and International Association of Insurance Supervisors recommendations (for the insurance sector) for effective management and supervision of climate-related risks (figure ES.10). As in the financial stability area, the first CRA for Jordan's financial sector will be instrumental for designing and operationalizing the microprudential framework. Specifically, the pilot CRA will provide major inputs for developing analytical metrics for microprudential monitoring.

**CBJ will integrate climate-related considerations into the supervisory review process for banks, insurers, and MFIs, following a proportionality principle.** In the banking sector, the main focus will be on Pillar 2 (supervisory review) and Pillar 3 (market discipline and disclosure) requirements, with the SREP serving as a core tool for greening the microprudential supervision (figure ES.11). Climate-related findings from the overall supervisory review and evaluation can lead to material supervisory measures applied to the assessed FIs. However, in the case of capital requirements, CBJ does not anticipate any adjustments or additional requirements driven by climate-related supervisory assessments any time soon. In the microfinance sector, CBJ's climate-related microprudential framework will first focus on encouraging MFIs to build capacity, set up governance arrangements, and then to prepare to gradually expand the integration of climate-related financial risk and opportunity considerations.

**After concluding the first cycle of the climate-related supervisory process, CBJ will adopt a consultative approach with each supervised entity to review key findings, recommendations, and the scope of the subsequent supervisory cycle.** This approach will involve discussions with the boards of FIs and require adequate follow-up on the shortcomings identified. To ensure that FIs have a clear understanding of what is expected of them, CBJ will issue supervisory guidelines and regulations before integrating climate-related risk considerations into the supervisory review process. These guidelines and regulations will establish clear standards to be followed by banks, insurers, and MFIs.

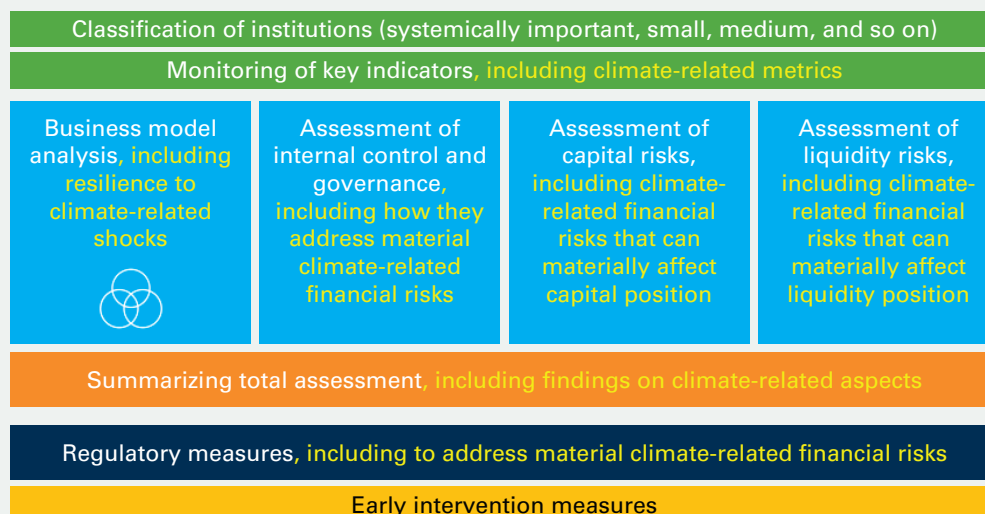


**Figure ES.10: Two Focus Areas of Climate-Related Considerations in CBJ’s Microprudential Framework**



Source: Original figure for this strategy  
 Note: Chapters 7 and 8 refer to the respective chapters of this strategy.

**Figure ES.11: Supervisory Review and Evaluation Process (SREP) and Climate-Related Entry Points**



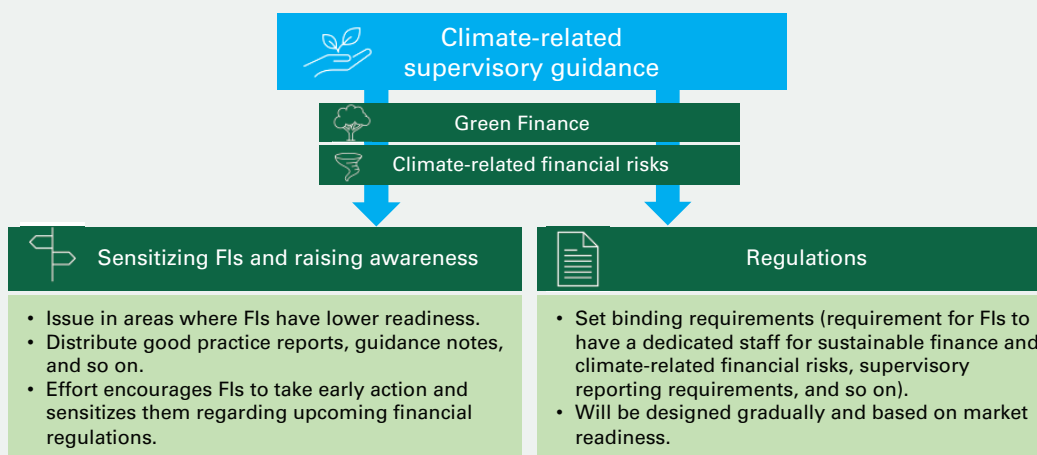
Source: Adapted from European Banking Authority  
 Note: Chapters 7 and 8 refer to the respective chapters of this strategy.

# SUPERVISORY GUIDANCE AND REGULATIONS

**CBJ’s supervisory guidance will play a crucial role in ensuring consistency and harmonization of climate-related practices in Jordan’s financial sector.** This guidance and these regulations will provide a framework for FIs to identify, assess, monitor, and address climate-related and environmental financial risks and contribute to green finance mobilization. Climate-related supervisory guidance and regulations will cover areas including governance arrangements, risk management, scenario analysis and stress testing, disclosure and reporting, business continuity, data collection and analysis, and the development of green financial products and services. Supervisory guidance and regulations will be split into two categories: (a) raising awareness and sensitizing FIs regarding upcoming regulations and encouraging them to take early action and (b) formally mandated regulations (figure ES.12). While raising awareness and sensitizing FIs can reduce information asymmetry and level the playing field, especially in areas with less readiness, regulations will be needed to ensure consistency in market practices and to prevent market players from anticompetitive conduct such as “cherry-picking” and “greenwashing”.

**Figure ES.13 lists the main focus areas of the supervisory guidance and regulations.** The rest of this section offers more detail on CBJ’s expectations for action within these categories.

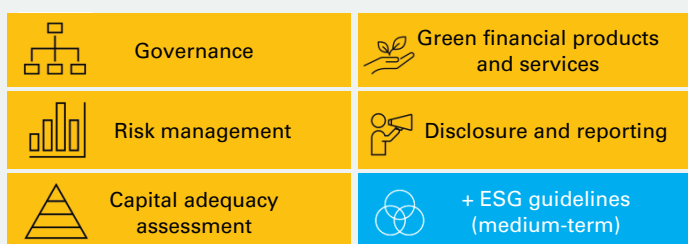
**Figure ES.12: Two Types of CBJ’s Climate-Related Supervisory Guidance**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance; FIs = financial institutions.

**Figure ES.13: Main Focus Areas of CBJ’s Climate-Related Supervisory Guidance and Regulations**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance.

**GOVERNANCE:** CBJ expects FIs to establish governance systems that facilitate the effective integration of climate-related considerations into their operations, risk management frameworks, policies, financing activities, and other related areas. Governance arrangements for effective implementation of climate-related activities may require establishment of specialized teams, organizational units, or departments that are responsible for leading and coordinating climate-related and sustainability aspects within the institution. FIs may achieve this alternatively by integrating the respective responsibilities within the functions of existing staff. Additionally, FIs must ensure that the board and senior management are actively engaged and committed to facilitating and mandating the incorporation and implementation of climate-related measures into the business models, strategies, and operational activities of the institution.

**RISK MANAGEMENT:** CBJ will issue supervisory guidance and regulations to ensure a coherent, harmonized, and proportional approach for managing climate-related financial risks (credit, liquidity, operational, market, underwriting, and others) in Jordan's financial sector. CBJ expects FIs to integrate climate-related risk drivers into their broader risk management frameworks and internal control and to develop qualitative and quantitative metrics to assess, monitor, and report on climate-related financial risks.

**CAPITAL ADEQUACY ASSESSMENT:** CBJ's supervisory guidance will include assessing capital adequacy against the potential impact of climate-related risk drivers. To perform these assessments, FIs will need to apply scenario analysis, stress testing, or sensitivity analysis. CBJ expects FIs to evaluate their solvency position, integrating climate-related factors as part of their existing risk categories. While CBJ does not mandate that MFIs conduct regulatory capital adequacy assessments, a simplified version of scenario analysis could still be useful to assess their financial viability and business model against climate-related risks; however, CBJ will discuss the most feasible options with the MFIs. In the insurance sector, CBJ may require larger insurers to develop their own risk and solvency assessment that integrates climate-related considerations.

**DISCLOSURE AND REPORTING:** CBJ will align its requirements for disclosure and reporting of climate-related information with international frameworks, particularly those of the International Sustainable Standards Board and the Task Force on Climate-Related Financial Disclosures, to enable harmonization and comparability of the disclosed information. As part of consultations with financial sector participants, CBJ will discuss the implementation sequencing, timeline, and scope of disclosure and reporting. For example, CBJ will require FIs to disclose their organization's governance around climate-related risks and opportunities and the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy, financial planning, and other areas. CBJ will develop templates for disclosure and reporting as part of broader CBJ supervisory guidance. To develop public disclosure requirements, CBJ will coordinate with JSC, Amman Stock Exchange, MOENV, and other stakeholders that have a role to play in the disclosure and reporting value chain. CBJ will consider requiring FIs (at least larger ones) to issue annual sustainability or green finance reports.

**GREEN FINANCE:** CBJ will dedicate a significant part of its supervisory guidance to help FIs mobilize green finance and develop green financial products and services. For example, CBJ will issue guidelines to set the standard and harmonize design, consumer protection, and provision of green finance products and services. CBJ will also adopt the Green Loan Framework, which will provide a clear set of principles, definitions, and rules governing the green loan product. The framework will also offer guidance on risk assessment approaches, regulatory treatment, and other related issues. More details on green finance mobilization are provided in the sections that follow.

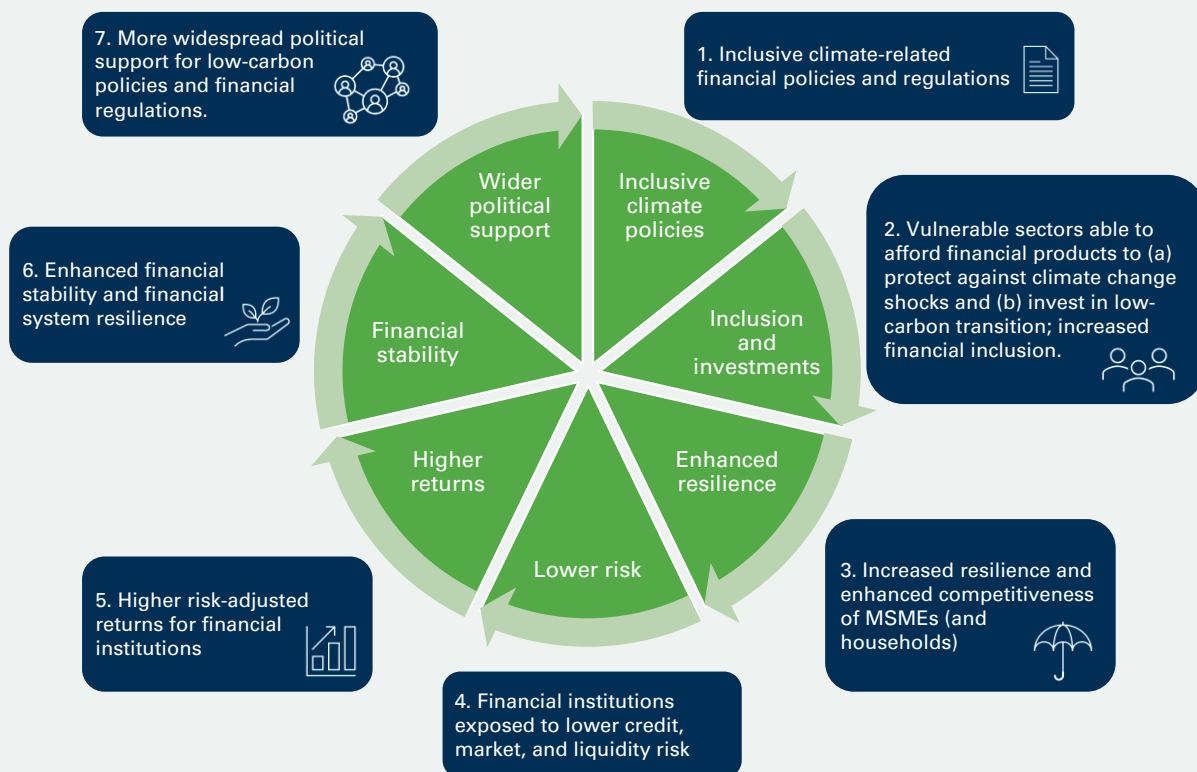
# INCLUSIVE GREEN FINANCE

**Physical and transition risks could result in the financial sector’s reducing its financing to the most climate-exposed sectors of the economy that would otherwise be willing to invest in green transition and enhance resilience to climate shocks.** Therefore, CBJ will develop inclusive climate-related regulations that address potential climate risk-driven financial sector retrenchment, in line with national climate-related strategies. Efforts to develop prudential measures (if any) that aim to ultimately mitigate climate change transition or physical risks to FIs should consider how to avoid material constraints on the availability and affordability of transition and adaptation financing—namely, financing that helps firms and industries to transition to climate-friendly operational models. The nexus between climate risk, financial instability, and financial exclusion can generate a vicious cycle of spiraling vulnerability: financially excluded sectors of the economy are unlikely to access the financial services necessary to adapt, invest in green technology, and increase their resilience to climate and environmental shocks. The vicious cycle is completed when FIs adjust to heightened physical and transition risks by retrenching further, discontinuing services to exposed, potentially less profitable clients.

**Inclusive climate regulations and policies have the potential to create a positive feedback loop that enhances resilience (figure ES.14).** If economic actors at the margins of the financial system can afford the services necessary to insure themselves against shocks, invest in green technology, and adapt to climate change and environmental degradation, they will increase their resilience. Clients that are more resilient to climate-related and environmental shocks may pose lower credit, market, and liquidity risks for the FIs that serve them. Carefully articulated green finance regulations and policies can help insulate a large part of the economy from climate shocks. CBJ will act on different fronts to make green financial policies inclusive: (a) regulations will be drafted with information costs and capacity constraints taken into consideration; (b) informational barriers will be reduced, for example, through the green credit bureau and green taxonomy; (c) existing financing tools for micro-, small, and medium enterprises (MSMEs) will be adjusted to serve green-inclusive purposes; (d) the possibility of a dedicated transition and adaptation financing program will be explored; (e) technology-enabled innovations in green finance will be leveraged to reduce transaction costs; and so forth.

**Inclusive green finance is particularly relevant for actors at the bottom of the economic pyramid.** Low-income households, rural communities, women, and MSMEs are particularly vulnerable to climate risk and financial exclusion. The FIs that serve them need particular support in managing and mitigating climate risk exposure, reducing the cost of climate and environmental due diligence, and providing affordable green finance. CBJ will work with FIs on risk mitigation, the reduction of information costs, and efforts to mobilize affordable green finance to ensure that marginalized and underserved segments of the economy are not financially excluded, thus promoting a just transition to a sustainable economy.

**Figure ES.14: Virtuous Cycle of Green Resilience and Supporting Policies**



Source: Original figure for this strategy.

Note: MSMEs = micro-, small, and medium enterprises.

## GREEN ISLAMIC FINANCE



**Jordan, as a predominantly Muslim country, has a large untapped market for Sharia-compliant financial services.** Developing Islamic finance initiatives and strategies can help tap this latent demand, contribute to wider socioeconomic objectives like financial inclusion, and create opportunities for greening the financial sector in Jordan. The common goals and outcomes of Islamic finance and green finance provide a potential symbiotic relationship between these two concepts. CBJ will work with the respective FIs in developing relevant guidance to integrate this part of the financial system into broader greening of the financial-sector framework in Jordan. In general, as for conventional FIs, it is important for Islamic FIs to understand, monitor, and manage climate-related risks and to leverage opportunities stemming from climate action.

**Greening Islamic finance in Jordan will proceed in three phases:** (a) capacity building (both CBJ and Islamic FIs), (b) adoption of the Framework for Sharia Compliant Sustainable Finance, and (c) implementation of the Framework for Sharia Compliant Sustainable Finance and follow-up actions. Adoption of the framework will be preceded by CBJ's efforts to enhance a broader Islamic finance development framework in Jordan. In addition, Islamic finance will be reflected in all of CBJ's supervisory guidance measures on climate-related considerations for governance, risk management, and so on. Supervisory guidance to Islamic FIs will follow the recommendations issued by the



General Council for Islamic Banks and Financial Institutions.<sup>3</sup> Given that Islamic finance has significant peculiarities compared to conventional finance (one of the reasons CBJ has a separate group for the supervision of Islamic FIs), it merits a focused separate framework addressing both the foundational and the green aspects of Islamic finance (figure ES.15). Nonetheless, as discussed in chapter 10, many of the fundamental conventional milestones of greening the financial sector could apply to Islamic finance, and CBJ will leverage these synergies.

**Figure ES.15: Greening Islamic finance: Conceptual entry points**

 Risk dimension	 Opportunity dimension	
<ul style="list-style-type: none"> <li>• Climate-related and environmental risks can impair value of Islamic assets, reduce liquidity, and lead to asset stranding.</li> <li>• Determine potential impact on individual Islamic financial institutions and financial stability more broadly.</li> </ul>	Value-based finance; symbiotic relationship between Islamic and green finance	Mobilization of diverse Islamic liquidity
	<ul style="list-style-type: none"> <li>• Helps address national climate financing gap and deepens financial sector.</li> <li>• Taps the latent demand for Islamic finance products in Jordan.</li> <li>• The role of Islamic finance in increasing financial inclusion.</li> </ul>	

Source: Original figure for this strategy.

## MOBILIZING GREEN FINANCE

**In addition to maintaining financial and monetary stability and enforcing the safety of individual FIs in the face of climate-related risks, CBJ can play a catalytic role in facilitating green finance mobilization.** Green finance is complementary to climate risk management under the prudential mandate: financing climate-responsive investments, which can be more sustainable and less risky in the longer term, can lead to the enhanced financial stability and safety of individual FIs. The World Bank's Country Climate and Development Report (CCDR)<sup>4</sup> estimated that Jordan's priority investments in key sectors aiming at climate change mitigation and adaptation projects will amount to US\$9.5 billion by 2030. A vibrant green finance market requires measures to be implemented on both the demand and the supply sides. Green finance demand-side measures go beyond CBJ's mandate and will also depend on the government of Jordan's broader policy framework for low-carbon transition and climate change adaptation. There are several entry points for CBJ to engage in facilitating the green finance supply side.

**CBJ's agenda in developing a green finance market is built around the following five pillars (figure ES.16):** (a) addressing information gaps (coleading the development of the National Green Taxonomy; promoting development of a green credit bureau, possibly linked to a monitoring, reporting, and verification system and potentially integrated into or built around the existing credit bureau), (b) leveling the playing field for FIs to develop green financial products and services (CBJ will adopt the Green Loan Framework, issue guidelines on green finance products and services, and promote development of climate-responsive insurance products), (c) facilitating development of the green finance

3 CIBAFI (General Council for Islamic Banks and Financial Institutions), *Sustainability Guide for Islamic Financial Institutions (IFIs): Guidelines for Islamic Banks*. (Kingdom of Bahrain: CIBAFI, 2022.).

4 World Bank Group, Jordan CCDR.

market through partnerships with other national stakeholders (de-risking mechanisms—for example, a financially sustainable green credit guarantee program with JLGC, green capital market development with JSC, or facilitating blended finance structures), (d) integrating climate-related considerations into CBJ’s other institutional activities and mandates (portfolio management, financial inclusion, monetary policy), and (e) contributing to mobilization of carbon finance and results-based climate finance (RBCF).

**INFORMATION GAPS are an important barrier for green finance development.** Information that is necessary to verify the “greenness” of borrowers or their investments can generate additional costs both to borrowers and to FIs providing green financing. To at least partly address these barriers, CBJ will colead the development of the National Green Taxonomy, facilitate the operationalization of the green credit bureau, promote climate-related disclosure, and monitor the green financing flows in Jordan’s financial sector.

**GREEN FINANCE PRODUCTS AND SERVICES: CBJ will level the playing field for FIs to engage more actively in developing green finance products and services.** CBJ’s Green Loan Framework will ensure the comparability, reliability, and transparency of green loan activities in Jordan. CBJ will explicitly consider keeping costs of a “green loan label” minimal to encourage the uptake of this product, while preventing a greenwashing risk. In addition to adopting the Green Loan Framework, CBJ will prepare market development guidelines for a broader range of green finance products and services. These guidelines will outline the benefits and drawbacks of each product and high-level principles for governance, design, consumer protection, and management of any greenwashing risk. CBJ will aim to analyze and identify the most realistic options to leverage financial technology (fintech) and broader technology-based innovations to facilitate a green financing ecosystem in Jordan and to reduce green finance transaction costs, including through the existing CBJ fintech regulatory sandbox. CBJ stands ready to cooperate with other authorities in Jordan to strengthen the disaster risk finance and climate insurance market. In the medium and long term, CBJ will consider introducing a requirement for FIs to prepare and implement their low-carbon transition and adaptation plans, which can stimulate transition and adaptation financing.

**Given the high importance of the adaptation agenda for Jordan, particular attention should be given to facilitating and expanding adaptation financing.** So far, the majority of the adaptation financing globally has come from the public sector; going forward, it will be crucial to mobilize the private sector for increased adaptation investments. The same imperative is highly relevant for Jordan. Increasing adaptation investments requires implementing demand-side measures, including raising awareness about potential returns and benefits from adaptation investments. Once private sector demand grows, FIs can play an increasing role in financing these investments. One of the entry points for CBJ to facilitate the financial sector preparatory work is to encourage and require FIs to develop both the transition and adaptation plans, which would include a strategic perspective on transition and adaptation financing in the short, medium, and long term. In addition, it will be important for Jordan to leverage international adaptation financing programs, and CBJ stands ready to consider its role in this area. Improving the adaptation financing flows can also be linked to the ongoing work on developing the monitoring, reporting, and verification (MRV) of adaptation activities in Jordan.

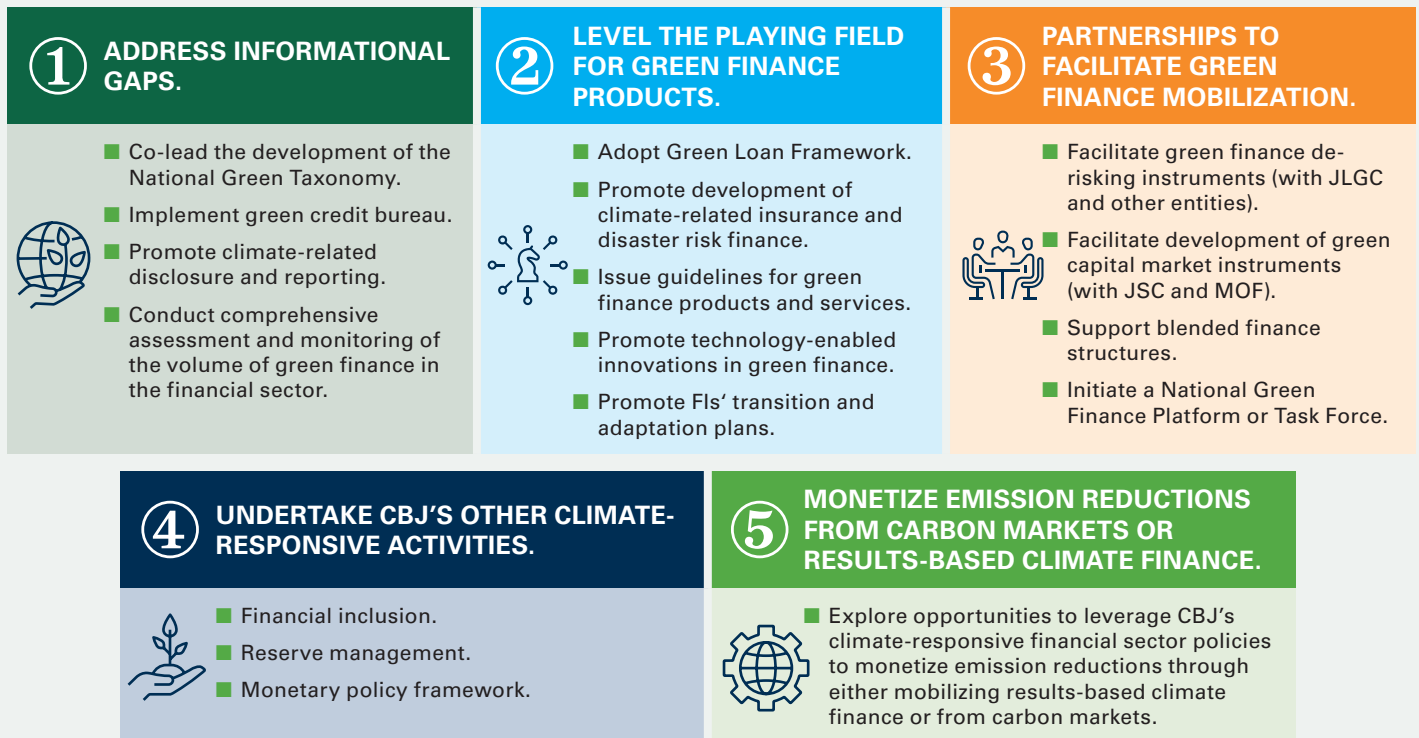
**PARTNERSHIPS: CBJ is committed to partnering with relevant stakeholders to facilitate the development of a comprehensive green finance ecosystem in Jordan.** Given that the green asset class is still relatively new, de-risking instruments may be necessary to catalyze green private investment. To this end, CBJ will encourage JLGC to gradually integrate climate-related considerations into its operations and risk management and to launch a dedicated green credit guarantee program. Furthermore, CBJ is prepared to participate in national efforts to develop and implement green-blended financing structures. CBJ is ready to cooperate (within its mandate) with JSC, MOF, and other authorities to enhance the climate responsiveness of capital markets and to leverage capital market tools for climate finance mobilization. Finally, the establishment of a national green finance platform or task force would be crucial for ensuring the smooth coordination of different green finance mobilization activities in Jordan: CBJ will initiate discussions with relevant authorities in Jordan to explore the possibility of creating such a platform or task force. Important among potential measures to facilitate Jordan's green finance market in its initial stages of development would be for the government of Jordan to explore potential partnerships with international institutions to establish new green finance facilities or to scale up existing ones, implemented through FIs.

**CBJ'S OTHER ACTIVITIES TO FACILITATE CLIMATE-RESPONSIVE ACTION: CBJ recognizes the importance of incorporating climate-related and environmental considerations into its other institutional actions beyond the prudential mandate.** For example, CBJ will explore gradually introducing sustainability aspects and will adopt the principles and objectives of socially responsible investing into reserve management, while ensuring that this does not undermine the core mandate of reserve management. In the longer term, CBJ will consider integrating climate-related considerations into the monetary policy operational framework, with the precondition that it does not undermine the operational ability to achieve core objectives and targets of monetary policy.

**MONETIZING EMISSION REDUCTIONS: Both carbon finance and results-based climate finance could be powerful tools to facilitate greening the financial sector in Jordan.** As a first step, CBJ will consider developing and adopting an internal road map or policy to set out the main principles of CBJ's level and type of engagement in carbon finance and results-based climate finance (RBCF) activities. CBJ will screen each and every policy and regulation under this strategy to assess their potential to mobilize carbon finance and RBCF. In addition, since carbon finance and RBCF are broad concepts that may work more efficiently with larger-scale initiatives, CBJ will initiate a memorandum of understanding or a similar agreement between CBJ, MOF, MOENV, and other authorities to agree on the terms of cooperation and coordination in the carbon finance and RBCF area. CBJ will also develop and issue guidelines for financial-sector participants explaining the core mechanisms behind carbon finance and RBCF and how banks, MFIs, insurers, and other FIs in Jordan can engage in this area.

**It is widely acknowledged that introducing a price on carbon represents a crucial precondition for filling the current gap in low-carbon investment.** When it comes to carbon pricing specifically, CBJ may have a limited role in this area, and key decisions should be made by the government of Jordan. However, one of the options is for CBJ to act as a trusted adviser to the government on economic and financial affairs, to highlight the need for carbon pricing as one of the most effective tools to price climate externalities. It is important to note that this strategy mostly focuses on results-based climate financing (and to a lesser extent carbon markets), which is a subset of a broader theme of carbon pricing. This includes consideration of impacts of such carbon pricing policies, if introduced, on financial stability through appropriate scenario analysis.

**Figure ES.16: Five Pillars of CBJ’s Engagement in Facilitating Green Finance Mobilization**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; FI = financial institution; JLGC = Jordan Loan Guarantee Corporation; JSC = Jordan Securities Commission; MOF = Ministry of Finance.

**Overall, greening the financial sector is a complex and long journey, requiring clear prioritization and sequencing.** While this strategy provides a detailed list of actions and objectives for the next five years, some of them will be implemented beyond the five-year period, and CBJ will implement the strategy following a prioritization path (figure ES.17). This will help avoid overburdening CBJ’s mandates and FIs, and it will allow CBJ to focus on a step-by-step approach to deliver high-quality results in different areas of greening the financial sector.

**Figure ES.17: Expected Prioritization of the Strategy's Milestones**

Target action and related chapter in the strategy	Priority	2024	2025	2026	2027	2028
<b>Capacity building and governance (Chapter 4)</b>						
Establish the Climate Change Risk and Green Finance Division.	1	█				
Implement at least 20 capacity-building measures, including jointly with FIs.	1	█	█	█	█	█
Become a core member of the National Climate Change Committee.	1		█	█		
Initiate a national platform or task force for green finance mobilization.	2	█	█			
Initiate a regional peer-learning initiative of central banks and financial regulators.	2			█		
Launch a regional conference on greening the financial sector.	3				█	█
<b>Climate risk assessment (Chapter 5)</b>						
Conduct a comprehensive climate risk assessment for the financial sector in Jordan.	1	█				
Address data gaps through systematic data collection. Operationalize technical tool kit for identification, assessment, and monitoring of climate-related financial risks.	1		█	█		
Publish at least two reports presenting key results of the climate risk assessment.	1		█	█		
Organize targeted workshops with FIs and media outreach events to share the results with internal and external stakeholders.	2		█	█		
<b>Integrating climate considerations into financial stability framework (Chapter 6)</b>						
Operationalize financial stability surveillance tool kit to identify, assess, and monitor climate-related financial stability risks.	2			█	█	█
Prepare a dedicated climate-focused section in the Financial Stability Report.	2			█		
Conduct workshops with FIs to discuss results of the climate-related financial stability surveillance and to facilitate a transfer of CBJ's technical expertise to FIs.	2			█	█	█
Prepare a macroprudential policy tool kit that can be activated if needed, to mitigate climate-related financial stability risks.	3				█	█
<b>Integrating climate considerations into microprudential framework (Chapter 7)</b>						
Identify and operationalize appropriate metrics/modules of the first climate risk assessment (and beyond) to be integrated into the microprudential surveillance tool kit.	2		█	█	█	█
Operationalize the climate-related microprudential supervisory tool kit (all the major SREP components for banks; supervisory review process for insurance and MFIs).	2			█	█	█
Conduct the first full supervisory review cycle with climate-related considerations. Issue recommendations to supervised FIs; arrange discussions with boards and management.	3				█	█
<b>Climate-responsive supervisory guidance (Chapter 8)</b>						
Conduct insurance and MFIs' surveys to assess the baseline of green finance and climate risk management activities.	2	█				
Conduct a benchmarking of Jordan's sectoral regulations and current market practices against the climate-related international standards.	1		█	█		
Issue regulations and guidelines for identifying, assessing, monitoring, and managing climate-related financial risks and for green finance activities.	1			█	█	█
Issue ESG guidelines.	3				█	█
Conduct follow-up consultations with FIs to discuss the progress and challenges with the implementation of new climate-related regulations or guidelines.	2				█	█
<b>Inclusive green finance (Chapter 9)</b>						
Integrate financial inclusion considerations as a cross-cutting element into broader climate-related regulatory and supervisory framework for risk management, governance, disclosure, reporting, and green financing.	1		█	█	█	█
Implement measures to scale up affordable green finance (see chapter 11).	1		█	█	█	█
<b>Sustainable Islamic finance (Chapter 10)</b>						
Address broader preconditions for Islamic finance development in Jordan.	1		█	█	█	█
Adopt and implement Framework for Sharia-Compliant Sustainable Finance.	2				█	█
<b>Mobilizing green finance (Chapter 11)</b>						
Develop and adopt a National Green Taxonomy.	1		█	█		
Launch a Green Credit Guarantee Program. Implement broader 'greening' JLCG measures.	1		█	█	█	█
Issue guidelines for green finance products and services.	2				█	█
Adopt Green Loan Framework.	2			█	█	
Promote development of climate-responsive insurance products and technology-enabled innovation in green finance.	2			█	█	█
Promote the operationalization of Green Credit Bureau.	3				█	█
FIs publish annual sustainability reports.	3				█	█
FIs adopt their low-carbon transition and adaptation plans.	3					█
Integrate climate-related considerations into reserve management and consider integrating them into monetary policy framework.	3		█	█	█	█
Adopt internal policy and issue guidance for FIs to engage in carbon finance and RBCF.	3		█	█	█	█

Source: Original figure for this publication.

Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance; FIs = financial institutions; JLCG = Jordan Loan Guarantee Corporation; MFIs = microfinance institutions; RBCF = results-based climate finance; SREP = supervisory review and evaluation process.











# INTRODUCTION AND STRUCTURE OF THE STRATEGY

**This strategy is a crucial addition to the national climate change agenda in Jordan.** Climate change is already evident in Jordan and can become a growing threat to the soundness and safety of financial institutions (FIs) and stability of the financial system. The Central Bank of Jordan (CBJ) has developed this flagship strategy to mark the major step in greening the financial sector in Jordan, which is expected to (a) strengthen capacity and governance, operationalize systems, and implement policies for green financing and climate risk management, leading to (b) enhanced resilience of the financial sector to climate-related and environmental risks and (c) increased mobilization of green finance. The strategy provides a holistic road map and detailed executive plans for CBJ, FIs, and other key partners for greening Jordan's financial sector and mobilizing green finance. The scope of the strategy is broad and covers the entire spectrum of measures for greening the financial sector, ranging from capacity building and climate risk assessment (CRA) to climate-related supervisory guidance, regulations, inclusive green finance, Islamic green finance, and mobilization of financing for climate-responsive investments.

**The strategy consists of 11 chapters.** Chapter 1 sets the stage and discusses why greening the financial sector is important for CBJ. Chapter 2 presents the strategy's vision and main objectives. Chapter 3 outlines the main results of CBJ's banking-sector survey conducted to inform the development of the strategy. Chapter 4 discusses CBJ's capacity-building program on green finance and climate risk management. Chapter 5 is focused on one of the major stepping stones for greening the financial sector: conducting the first CRA for Jordan's financial sector, which will help identify and quantify key climate-related risks that can have material impacts on FIs' safety and soundness. Chapter 6 presents how CBJ is going to integrate climate-related considerations into the financial stability surveillance work and macroprudential policy tool kit. Reflecting climate-related factors in a microprudential framework is discussed in chapter 7, while more details on what FIs can expect from CBJ's supervisory guidance and regulations are given in chapter 8. Potential measures for inclusive green finance and the importance of minimizing unintended consequences and exclusionary effects from climate risk management are presented in chapter 9. Chapter 10 refers to a large potential of Islamic finance in Jordan and the need to realize the symbiotic relationship between Islamic and green finance. Chapter 11 outlines a wide range of entry points to facilitate mobilization of green finance in Jordan's financial sector and beyond.







# WHY IS GREENING THE FINANCIAL SECTOR IMPORTANT FOR CBJ?







## 1.1 JORDAN'S CLIMATE CHANGE CONTEXT

**Both physical and transition climate change risks are highly relevant to Jordan**, as their effects are already evident and are expected to intensify over time, potentially leading to spillover effects on the real economy and financial stability. Jordan is already facing the impacts of climate change, including rising temperatures, decreasing precipitation, and more frequent and severe droughts. Since the 1960s, annual maximum temperatures have increased by 0.3 to 1.8°C, and minimum temperatures have risen by 0.4 to 2.8°C across various climate regions. The annual precipitation has declined by 5 to 20 percent, depending on the area. These changes are exacerbating the scarcity of water, which is a critical resource for the country since Jordan is one of the most water-scarce countries in the world. According to the Notre Dame Global Adaptation Initiative (ND-GAIN) index, the nation's ranking for climate vulnerability worsened from 63 in 2015 to 73 out of 182 nations in 2022.<sup>5</sup> Future climate modeling shows (a) further decreases in total precipitation; (b) increasing variability in the location, timing, and quantity of rainfall; (c) average temperatures up to 2.9°C warmer by 2050; (d) increased drought occurrence, length, and severity; and (e) more frequent extreme events.

**Climate change will exacerbate Jordan's development challenges by affecting people, natural resources, and the economy, creating pressing adaptation needs across sectors.**<sup>6</sup> The five largest export sectors—textiles, chemicals, fertilizers, pharmaceuticals, and rare minerals—accounted for more than 60 percent of Jordan's total export volume in 2021. They are all either highly energy and water intensive or sensitive to energy and water tariffs. Firms expect to be affected by climate change, with increased scarcity and costs of water and energy inputs being the key threats; however, many small to medium enterprises (SMEs) are unprepared for those changes.

**While Jordan is a small greenhouse gas (GHG) emitter globally, significant development and adaptation cobenefits are associated with investments in climate change mitigation in the urban, transport, and energy sectors.** Jordan is heavily reliant on imported fossil fuels, which makes the country particularly vulnerable to rising energy costs and price volatility. The transport sector is catching up with the energy sector as the country's top GHG

5 The ND-GAIN Index ranks countries on the basis of their vulnerability to climate change and other global challenges, as well as their readiness to improve resilience.

6 World Bank Group, *Jordan Country Climate and Development Report* (CCDR series, Washington, DC: World Bank, 2022), <http://hdl.handle.net/10986/38283>.

emitter, and transport-related inefficiencies are equivalent to at least 6 percent of the gross domestic product (GDP). As discussed in the Jordan Country Climate and Development Report,<sup>7</sup> comparison of the GHG intensity of Jordan's key exports with more advanced economies shows room for improvement.

**To address these climate-related risks and turn them into opportunities, Jordan was among the first group of developing countries to ratify the United Nations Framework Convention on Climate Change.** A number of national strategies and initiatives have been developed to date. For example, Jordan adopted the National Green Growth Plan, followed by sectoral National Green Growth Action Plans 2021–2025. Jordan submitted its National Adaptation Plan in 2021, reiterating the urgency of implementing adaptation measures. Green economy is one of the growth drivers in Jordan's Economic Modernization Vision. The legal framework for climate action has been strengthened, notably with the Climate Change Bylaw enacted in 2019, which established the National Climate Change Committee. In 2021, Jordan increased its commitment to reducing GHG emissions from 14 percent to 31 percent by 2030, with 26 percent conditional on financing and 5 percent unconditional.

## 1.2 CBJ'S CLIMATE CHANGE ACTION

**Jordan's financial sector is sizable compared with its GDP (more than 180 percent), which makes it a potential amplifier of climate-related risks** if they are not effectively managed. However, with the right policies and regulations in place, the sector can also be a key player in mobilizing green finance and enhancing resilience to climate-related shocks. As such, there are three main perspectives making it important for CBJ to engage in climate action: (a) risk—climate change can undermine financial stability; (b) opportunity—mobilizing green finance for sustainable investments; and (c) climate-related risks and opportunities for CBJ's own operations.

### Risk dimension

**Climate-related risks can affect the safety and soundness of individual financial institutions** (FIs)—banks, microfinance institutions (MFIs,) and insurers—as well as the stability of the financial sector. Ensuring that material climate-related financial risks are properly identified, assessed, and managed is part of CBJ's direct mandate of safeguarding financial stability. Globally, a growing number of central banks have issued warnings on the impact of climate change and environmental risks on the stability of their financial systems.

**In Jordan, the intertwined physical and transition risk drivers may affect FIs' borrowers, leading to increased credit risks, especially in segments most vulnerable to water stress and those with energy as one of the largest inputs.** Water scarcity and energy insecurity are cross-cutting issues constraining growth across sectors in Jordan, and climate change is likely to exacerbate them. An increasingly large part of the Jordanian economy is also subject to extreme weather events.<sup>8</sup> FIs with client firms that rely on fresh water and other ecosystem services may need particular supervisory attention. Given the size of Jordan's financial sector, the impact of climate change on financial risks (for instance, an increase in nonperforming loans due to severe droughts) can create strong feedback loops on the real economy (such as through reduced investment financing).

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<sup>7</sup> World Bank Group, *Jordan CCDR*.

<sup>8</sup> World Bank Group, *Jordan CCDR*.

**Transition risk in Jordan is likely to have significant effects on the industry, agriculture, and transport sectors.**

FIs serving firms that rely on fossil fuels may be particularly exposed to transition risk. Price volatility in fossil fuels, rising environmental standards, and changes in consumer preferences and technology threaten the commercial viability of polluting and GHG-emitting companies, by increasing credit, liquidity, and market risks for FIs that serve them. While Jordan is a marginal contributor to global GHG emissions, the financial sector is exposed to transition risks through holdings in CO<sub>2</sub>-intensive industries. Construction, real estate, and industry sectors account for 38 percent of Jordan banks' total credit portfolio. In more advanced economies, industry and real estate are increasingly affected by transition impacts as governments commit to curbing CO<sub>2</sub> emissions to keep warming below 2 degrees. Moreover, 15 percent of loans are in public services and utilities, which encompasses the energy sector, the main source of GHG in Jordan.

**Climate-related risk drivers are also relevant to Jordan's MFIs and insurers.** MFIs typically serve people and micro and small enterprises that have lower financial and technical capacities, which also makes their clients more vulnerable to negative climate change effects due to lower adaptive capacity. As such, in some cases, the climate-related financial risks for MFIs may be even more significant than for banks. As discussed in the next chapters of this strategy, MFIs can help their clients enhance resilience against climate effects, both through lending to climate-smart investments and through providing technical advice and raising awareness. In the case of the insurance sector, climate change increases the frequency, severity, and concentration of weather-related insurance claims, as well as the level of variability. If the impact of climate change is not properly accounted for, underwriters creating insurance policies may underestimate the risks to which an insurer is exposed.

## Opportunity dimension

**The financial sector in Jordan can be a leading force in mobilizing green finance.** As indicated in Jordan's updated nationally determined contributions (NDCs), the estimated total cost of achieving the NDC targets is US\$7.5 billion, of which the government of Jordan intends to invest around 7.5 percent (US\$565 million) through its own means. The remaining financing gap is expected to be addressed by mobilizing private sector investment as well as through support from international FIs. World Bank (2022) estimated that Jordan's priority investments in key sectors aiming at climate change mitigation and adaptation projects will amount to US\$9.5 billion by 2030. Against this backdrop, Jordan's financial sector can play a major role in mobilizing green finance. For example, in February 2023, the banks' total credit portfolio stood at US\$46 billion. Hypothetically, if 10 percent of this portfolio was green, it would cover two-thirds of Jordan's NDC US\$7 billion climate funding gap. In addition to providing green financing, the financial sector has a unique role to play in enhancing resilience against climate shocks, for example, through climate-responsive insurance products as well as through microfinance solutions for more vulnerable people and micro- and small enterprises.



## CBJ's own operations

**Beyond its financial regulation and supervision mandate, CBJ recognizes the significance of climate-related action** and acknowledges the existence of several entry points that make it imperative for CBJ to address climate-related risks and opportunities. Central banks are typically entrusted to manage large assets and investment portfolios to fulfill their mandate of maintaining monetary stability and other policy objectives. In May 2023, CBJ's gross foreign reserves stood at more than JD 12 billion. There are active discussions globally on potential climate-related risks and opportunities for central banks' reserve management. As such, increasingly, more central banks are integrating climate (and sustainability) considerations into their reserve management investment strategies. It is also acknowledged that climate change factors can have significant impact on monetary policy transmission. CBJ also possesses tools to facilitate green finance mobilization, which are discussed in more detail in chapter 11.





# STRATEGY'S VISION AND OBJECTIVES







## 2.1 VISION

**The vision of this strategy is to transform Jordan’s financial sector into a leading force for green finance mobilization and enhanced resilience** against climate-related and environmental risks while also enabling Jordan to become a regional leader in sustainable finance. To realize this vision, CBJ will closely collaborate with stakeholders across the financial sector and beyond. Specifically, CBJ will guide FIs to integrate climate-responsive and environmental considerations into all aspects of financial decision-making, including their corporate governance structures, risk management and internal controls, disclosure and reporting, and green financing. CBJ is committed to leading by example and will establish the Climate Change Risk and Green Finance Division, conduct a comprehensive climate risk assessment for Jordan’s financial sector, implement a holistic capacity-building program, and issue supervisory guidance and regulations to harmonize the climate-responsive practices within Jordan’s financial sector.



### VISION OF THE STRATEGY

To transform Jordan’s financial sector into a leading force for green finance mobilization and enhanced resilience against climate-related and environmental risks while also enabling Jordan to become a regional leader in sustainable finance.

## 2.2 OBJECTIVES

**The strategy has three overarching objectives:** (a) to strengthen capacity and governance, operationalize systems, and implement policies for green financing and climate risk management, leading to (b) enhanced resilience of the financial sector to climate-related and environmental risk and (c) increased mobilization of green finance. CBJ will aim to achieve these broad objectives through a number of intermediate results, which include, for example, coleading the development of the National Green Taxonomy; conducting the first comprehensive climate risk assessment for the financial sector in Jordan; implementing a comprehensive capacity-building program; issuing supervisory guidance and regulations for FIs to integrate climate-related considerations into their governance structures, risk management framework, and green financing activities. Figure 2.1 presents parts of the expected key results under various areas covered by this strategy.

**Figure 2.1: Selected results under key areas covered by this strategy**



Source: Original figure for this strategy.

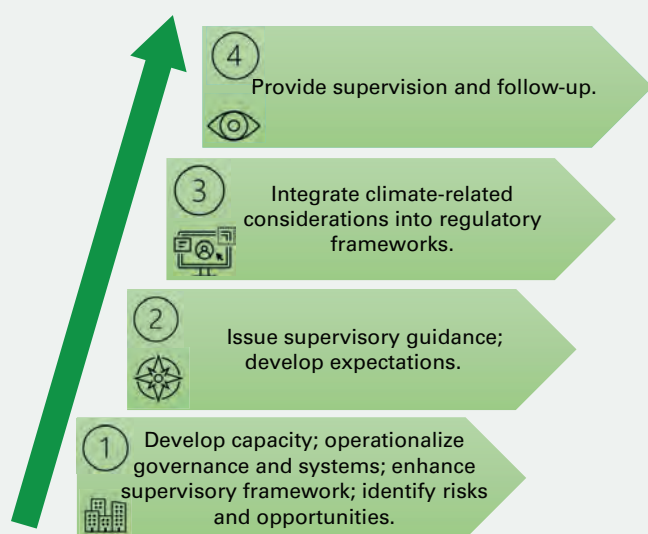
Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance; FIs = financial institutions.



## 2.3 SCOPE AND SEQUENCING

**Sequencing (both of sectors and of the strategy’s milestones) and proportionality are two foundational principles of this strategy and are applicable to all its components.** The banking sector accounts for more than 96 percent of financial sector assets in Jordan. Thus the strategy will initially focus on the banking sector, followed by insurers and MFIs. The proportionality principle will be applied to all three sectors: new requirements in green finance and climate risk management will depend on the size, complexity, and risk appetite of the FIs. This will allow CBJ to avoid overburdening those FIs that have low financial and technical capacities and could not have systemic impact on financial stability. Given that green finance and climate risk management are new areas for most FIs in Jordan, the first stage of the strategy’s implementation will focus mostly on building foundational capacity; setting up governance arrangements; and developing tools that enable CBJ and FIs to identify, assess, and manage climate-related financial risks and to engage in green financing (figure 2.2).

**Figure 2.2: High-level sequencing of the strategy’s implementation**



Source: Original figure for this strategy.

**The milestones outlined in this strategy are in line with CBJ’s mandate and can be implemented by either CBJ as a financial regulator and supervisor or by supervised FIs.** Some targets are linked to CBJ’s activities beyond its prudential mandate, such as reserve management, financial inclusion, or monetary policy. CBJ’s aspiration to become one of the national champions for green finance and climate risk management will require close collaboration and coordination with other stakeholders and authorities. CBJ recognizes that the instruments that central banks and supervisors have at their disposal cannot substitute for the many areas of interventions that are needed to transition to a low-carbon economy. This highlights the important role other players need to play, including the government, the private sector, and NGOs. CBJ will look at such interventions, understand their impact, and adjust its own policies. It will be

important to foster partnerships between CBJ, JSC, JLGC, MOENV, MOF, and others to achieve key results such as developing a National Green Taxonomy, launching a green credit guarantee program, and facilitating blended finance structures and green capital market solutions.

**CBJ recognizes that the greening the financial sector actions should come as an integral part of a broader package of measures linked to CBJ’s supervisory and regulatory framework** (for example, further developing and implementing Pillar 2 methodologies and increasing supervisory capacity). Moreover, greening the financial sector actions should be implemented by minimizing potential conflict between the CBJ’s core regulatory and supervisory mandates. More specifically, pursuing enhanced green financing should not undermine risk management by financial institutions.

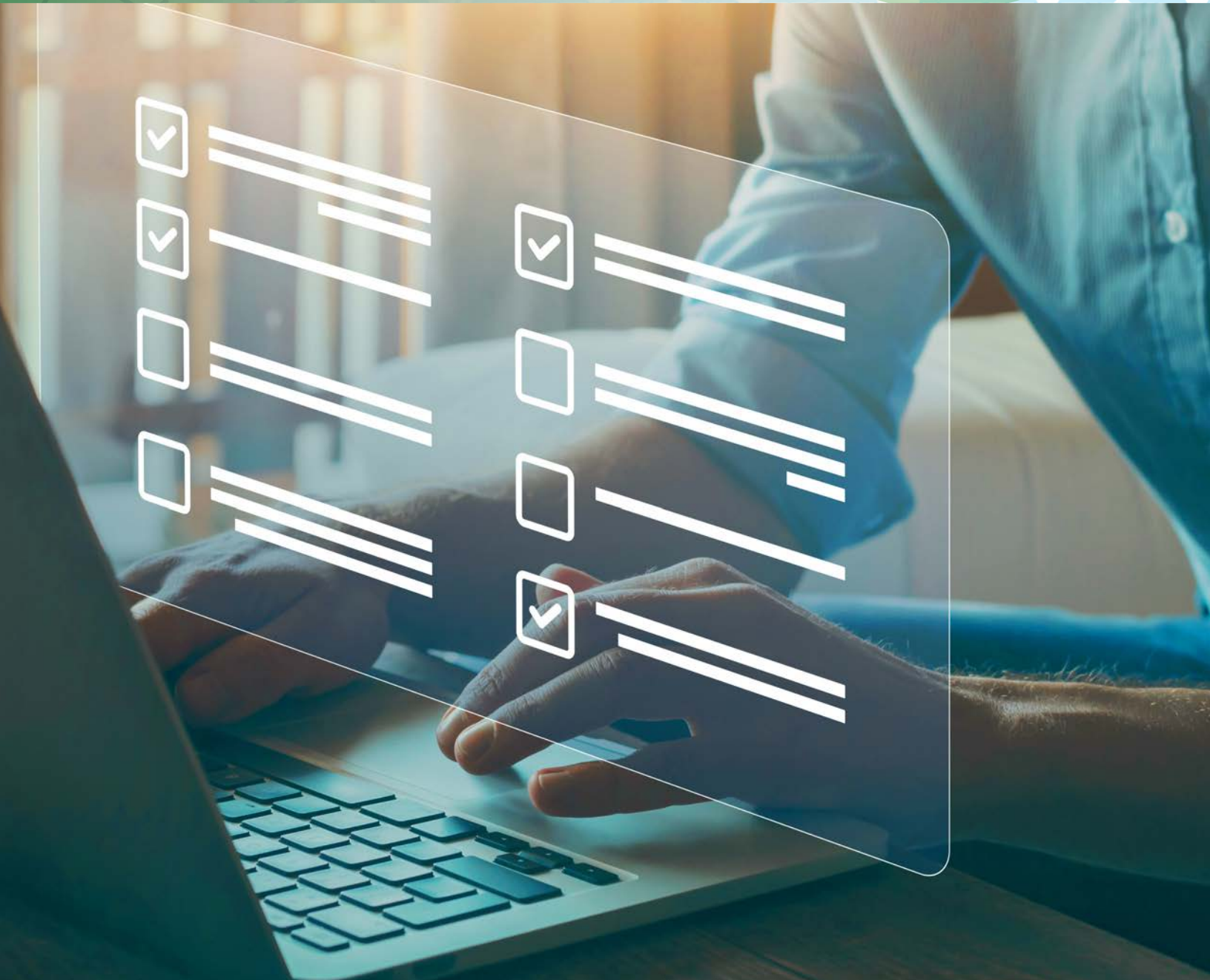








# **CBJ'S SURVEY OF CLIMATE RISK MANAGEMENT AND GREEN FINANCE PRACTICES IN THE BANKING SECTOR**



**At the end of 2021, CBJ carried out a survey to assess the current status of climate-related risk management and green finance in Jordan's banking sector.** This survey informs the strategy and the next steps in greening the financial sector in Jordan. It comprised 47 questions grouped around four focus areas: (a) management of climate-related risks, (b) green finance, (c) disclosure and compliance, and (d) capacity building. The survey was shared with 23 banks in Jordan, 17 of which responded. CBJ will conduct similar surveys for the insurance and microfinance sectors in the early stages of the strategy's implementation.

## SUMMARY

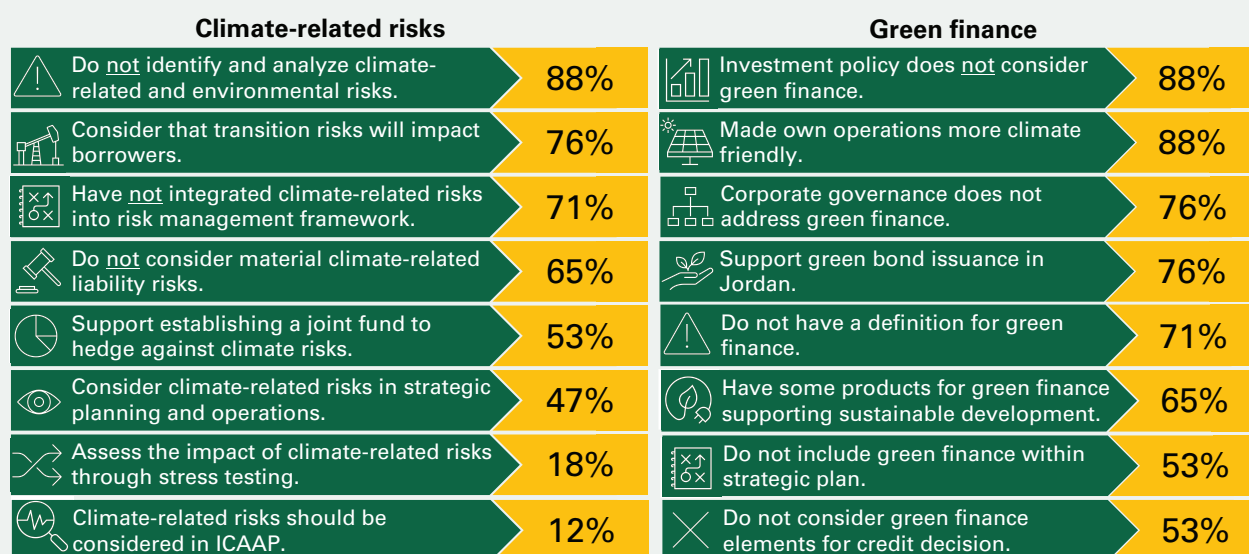
**The survey highlights that while most banks acknowledge the significance of climate-related risks, only a few of them have the necessary tools and capabilities to effectively manage and mitigate these risks.** The banking sector already offers some products aimed at supporting sustainable development; however, progress is not even among the banks. Many banks have yet to include green finance in their strategic plans or corporate governance and to consider green finance elements when making credit decisions. On the positive side, the vast majority of banks have implemented climate-responsive practices in their own operations (for example, renewable energy) and have a positive view of issuing green bonds in Jordan.

## MANAGEMENT OF CLIMATE-RELATED RISKS

**A total of 76 percent of respondent banks believe that their borrowers will be affected by climate change transition risks** (figure 3.1). According to the survey, the sectors most vulnerable to climate-related risks in Jordan are those that rely on traditional energy sources and carbon supply chains. To manage and mitigate these risks, respondents recommended a range of precautionary measures. These include financing renewable-energy projects, integrating climate-related considerations into FIs' strategic plans and policies, developing capacity and human power for green sectors such as clean energy, integrating climate risks into investment and credit policies, developing tools for assessing climate-related risks, and raising awareness about climate risks.



**Figure 3.1: Selected results from CBJ’s survey — climate-related risks and green finance**

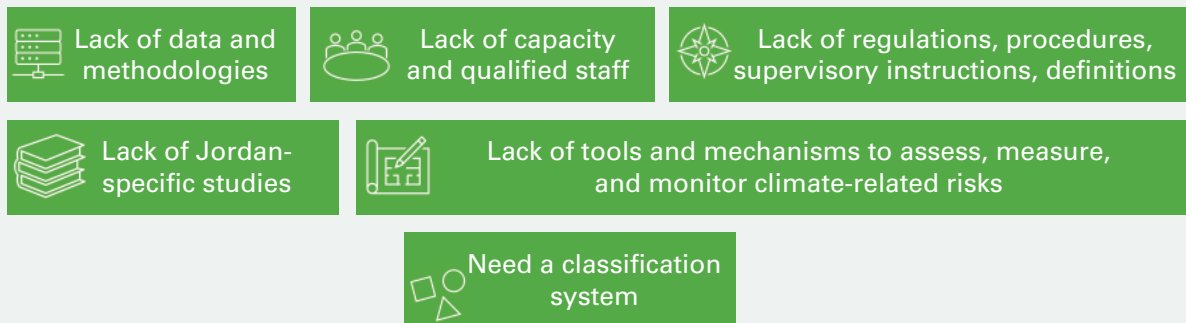


Source: CBJ’s Survey of Climate Risk Management and Green Finance Practices in the Banking Sector 2021.

**While banks in Jordan agree that climate-related risks are significant, they still have a long way to go to develop the tools to properly assess and mitigate those risks.** Only 29 percent of banks reported that climate change and environmental risks are integrated within their risk management framework, while only 12 percent agree that these risks should be considered in the internal evaluation of capital adequacy. Only 18 percent of respondents currently perform stress tests to measure the impact of climate-related and environmental risks on their banks. This low percentage is due primarily to several factors, including the lack of available data, insufficient capacity of bank employees, and the absence of necessary systems, supervisory instructions, and definitions. As such, there is a pressing need for increased support and resources to enable banks to effectively manage climate and environmental risks and to conduct comprehensive stress tests to assess their impact. Additional barriers limiting banks’ ability to manage climate-related risks include the lack of Jordan-specific studies and tools and mechanisms to assess, measure, and monitor the risks (figure 3.2). The respondent banks identified key steps to improve their ability to perform climate-related stress tests. These steps include strengthening their internal capacity, improving data collection processes, collaborating with data providers, and establishing specialized teams focused on addressing climate change and environmental risks.

**According to the survey results, the general consensus among respondents is that credit risk is the risk category that can be most affected by climate change, followed by operational and concentration risks.** In terms of key exposures to climate change and environmental risks, banks ranked large companies, SMEs, sovereign exposures, and retail borrowers as the most vulnerable. Key physical risks in Jordan cited by the respondents include drought, floods, and a chronic shortage of water.

**Figure 3.2: Impediments affecting banks' ability to manage climate-related and environmental risks**



Source: CBJ's Survey of Climate Risk Management and Green Finance Practices in the Banking Sector 2021.

## GREEN FINANCE

**Of the 17 respondent banks surveyed, only 5 currently have a definition for green finance.**<sup>9</sup> Less than half of the respondents have included green finance in their bank strategic plan and take green finance elements into consideration when making credit decisions, but 41 percent of banks are expecting to amend their credit policy to include green finance elements. Only 12 percent of respondents currently consider green finance in their approved investment policy, but 41 percent are intending to amend it to account for these elements. Also, 76 percent of banks do not address green finance in their corporate governance

**The majority of banks (65 percent) indicate having some type of products aimed at supporting sustainable development.** These sustainable development products typically include financing for solar heaters, renewable-energy systems, and energy-saving equipment and devices. In many cases, banks participate in CBJ's refinancing programs to offer these products to their customers. The credit policy of some banks stipulates that sectors that harm the environment shall not be financed and that renewable-energy sectors shall be financed with suitable rates. Challenges in providing green financing include the lack of guarantees, lack of specialized entities to assess the feasibility of green projects, lack of technical capacity, lack of client awareness, and unclear risk and return profiles. Finally, the vast majority of respondent banks have implemented climate-responsive practices in their own operations (88 percent) and support issuing green bonds in Jordan (76 percent).

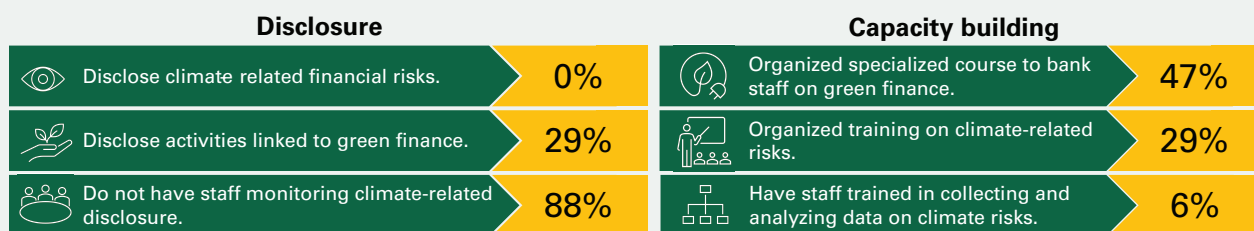
9 Some banks use the Organisation for Economic Co-operation and Development definition, while some are in the process of internally developing one.

# DISCLOSURE AND CAPACITY BUILDING

**Engagements linked to climate-related disclosure are at a relatively early stage.** Currently, no banks disclose information about climate-related financial risks, and only 29 percent disclose bank activities related to green finance. Two banks indicated having a unit or department applying criteria linked to green finance or climate-related disclosure. Banks cite the lack of data and information and the lack of requirements for companies to disclose such information as the main impediments.

**In the area of capacity building, roughly half of the respondent banks have organized specialized courses for their staff on green** finance and sustainable development (as shown in figure 3.3). Additionally, five banks have provided training on the management of climate-related risks. However, only one bank has reported having employees trained in collecting and analyzing data related to climate-related risks, and over 70 percent of banks expressed their intention to organize training courses focused on green finance and climate-related risk management. Overall, financial sector participants have identified capacity gaps as a significant barrier to their more active engagement in climate-responsive activities. As a way forward, banks suggest arranging specialized capacity-building programs, and one of the modalities is through partnership between CBJ and financial sector associations. Survey participants were also asked to identify what type of support they need the most to be contracted through external consulting services, and among the main areas were setting up policy and procedures regarding climate change risks and policies related to green finance and investment in green bonds, as well as tools to assess the environmental risks and impacts of projects to be financed.

**Figure 3.3: Selected results from CBJ’s survey – disclosure and capacity building**



Source: CBJ’s Survey of Climate Risk Management and Green Finance Practices in the Banking Sector 2021.





# INSTITUTIONAL CAPACITY BUILDING AND SETTING UP GOVERNANCE FOR GREENING THE FINANCIAL SECTOR

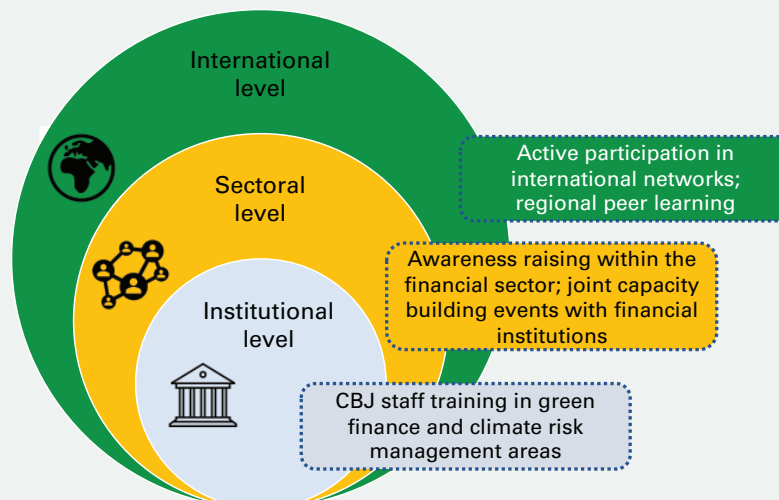




**Given that greening the financial sector is a relatively new area, CBJ and FIs face significant capacity-building needs.** They include developing the skills and knowledge of staff; finding new technical tools and models to assess climate-related financial risks, estimate their impact, and collect data; developing climate-responsive supervisory guidance; and measuring, monitoring, and facilitating green financing in the financial sector.

**To achieve the ambition to become one of the leading entities in green finance expertise nationally and regionally, CBJ will design and implement a holistic capacity-building program.** This program is seen as a cross-cutting enabler of all other actions and their sustainability in greening the financial sector. Overall, most of CBJ’s organizational units are still at a nascent stage when it comes to considerations of climate-related issues; therefore, a gradual approach will be needed to strengthen the skill base for greening the financial sector. CBJ’s capacity-building program will be designed around three layers: institutional, sectoral, and international (figure 4.1). In addition, to facilitate interinstitutional coordination, CBJ will aim to become a core member of the National Climate Change Committee.

**Figure 4.1: Three components of CBJ’s capacity-building program**



Source: Original figure for this strategy.  
 Note: CBJ = Central Bank of Jordan.

## 4.1 CAPACITY BUILDING FOR CBJ STAFF

### Setting up an internal governance

CBJ will establish the **Climate Change Risk and Green Finance Division (CCRGFD)** as part of the **Financial Stability Department** to lead, coordinate, and facilitate the implementation of the strategy. This division will cover both the climate risk-related and green finance areas and will take a leading role in coordinating the capacity-building program within CBJ and between CBJ and FIs. The CCRGFD will engage with different CBJ organizational units or departments to help them identify concrete capacity-building needs for mainstreaming climate considerations into their functional areas (figure 4.2).

**Figure 4.2: CCRGFD's responsibilities in the capacity-building area**



Source: Original figure for this strategy.  
Note: CBJ = Central Bank of Jordan.

**The establishment of the CCRGFD is one of the major steps in setting up an appropriate governance structure for mainstreaming climate considerations into CBJ's activities.** The CCRGFD will need to have the capacity to lead CBJ-level discussion across different areas, be they financial stability, microprudential supervision, monetary policy, climate risk assessment, or others. In addition, it is expected that each CBJ unit will assign a focal point responsible for climate-related and environmental considerations within their functional area. Also, CBJ will establish clear accountability lines when it comes to the implementation of the strategy.

## Indicative thematic coverage of the capacity-building program

**Capacity building is a permanent and continuous activity, which requires clear sequencing.** CBJ will adopt a structured multiyear capacity-building program, which will be reviewed on an annual basis and can be flexibly amended to capture new knowledge and emerging technical evidence in greening the financial sector. This program will focus primarily on raising awareness, enhancing knowledge, and developing skills of individuals at all levels of CBJ’s professional hierarchy and will be differentiated to fit both technical and managerial staff. The program will be focused mostly on two areas: (a) facilitating the mobilization of green finance in Jordan’s financial sector and (b) managing climate-related and environmental financial risks. The list of key topics to be covered by the plan is provided in figure 4.3.

**Figure 4.3: Representative topics for CBJ’s institutional capacity-building program**

Climate-related risk management		Green finance	
Climate change risks to financial sector: key metrics and models	Climate change in Jordan: macro-financial perspective	Global trends and best practices in green finance mobilization	Carbon markets and carbon finance
Integration of climate-related risks into prudential supervision	Assessment of climate-related risks; data collection and analysis	Green taxonomies; public disclosure and reporting (ISSB, TCFD)	Green bonds, other capital market instruments
Disaster risk management practices and climate insurance	Climate stress testing and scenario-based approach	Green loans, de-risking tools, other green finance products	Green financial inclusion; Green Islamic Finance
Global standards for risk management (BCBS, IAIS, CIBAFI)	Development of climate-responsive financial regulations	International green finance frameworks (Green Loan Principles)	Innovative technology-based solutions for green finance

Source: Original figure for this strategy.

Note: BCBS = Basel Committee on Banking Supervision; CIBAFI = General Council for Islamic Banks and Financial Institutions; IAIS = International Association of Insurance Supervisors; ISSB = International Sustainability Standards Board; TCFD = Task Force on Climate-Related Disclosures.

**To implement the capacity-building program, CBJ will employ a wide range of capacity-building measures.**

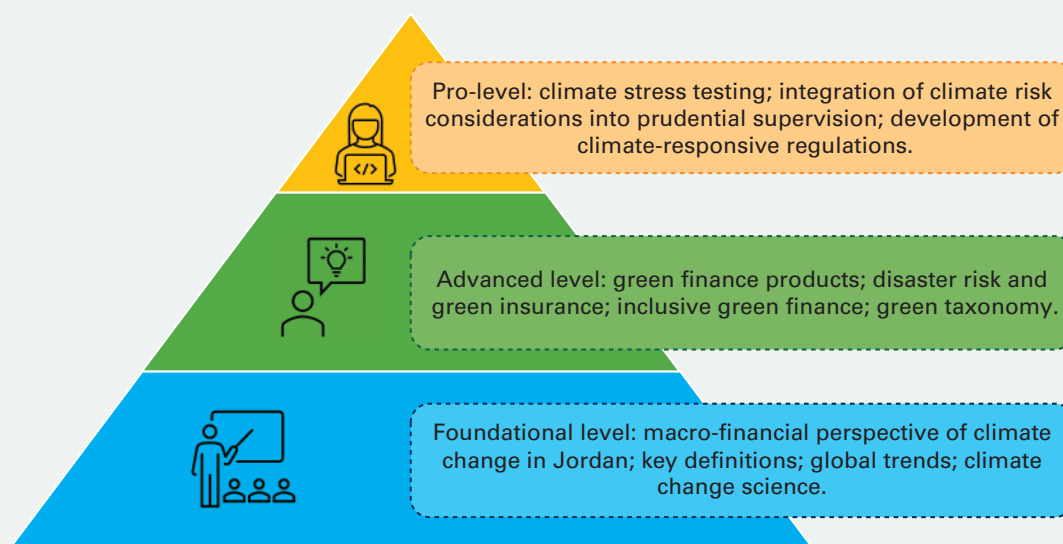
They will include but not be limited to the following: workshops and seminars, simulation of case studies, exchange visits and peer learning with central banks and financial regulators in the region and beyond, online courses, and both on-the-job and off-the-job training measures.



## Sequencing of the capacity-building program

**CBJ's capacity-building program will be split into three categories: foundational, advanced, and professional level, reflecting increasing levels of sophistication.** Foundational-level training will have a broader target audience and will be focused on raising awareness and strengthening basic understanding of topics relevant to greening the financial sector. These training measures will help to level the playing field and to harmonize over the global landscape basic definitions and understanding of green finance and climate risk management, climate change challenges for Jordan's economy, and the role of the financial sector in financing low-carbon transition and adaptation. Advanced-level training will entail more specialized topics, such as financial products and best practices and different approaches for climate risk management. Capacity-building measures in this level, such as financial stability and microprudential supervision, will be best suited for core teams; however, they can still accommodate relatively broad attendance. The pro-level capacity-building measures will be directed to CBJ's staff, who will be spearheading integration of climate considerations into their functional areas (figure 4.4).

**Figure 4.4: Three levels of CBJ's capacity-building program**



Source: Original figure for this strategy.

## 4.2 RAISING AWARENESS AND FACILITATING CAPACITY BUILDING WITHIN THE FINANCIAL SECTOR

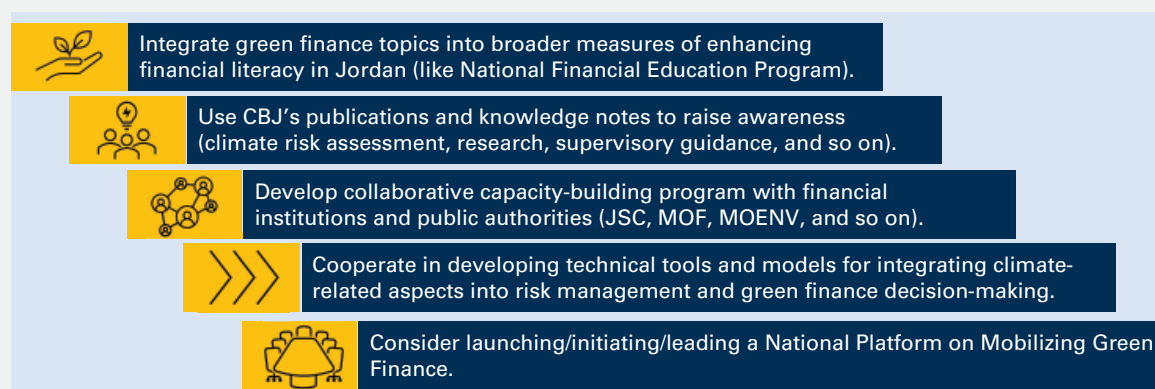
**CBJ will engage with FIs and other strategic partners** to coordinate capacity-building activities that support the greening of the financial sector in Jordan (figure 4.5). CBJ's capacity-building program will entail a set of collaborative training events, which could be attended jointly by FIs (for instance, the Association of Banks, the Jordan Insurance Federation, the Jordan Microfinance Network, and more) and CBJ staff.

**As green finance becomes increasingly mainstream, there will likely be a growing demand for retail services such as green lending.** Enhanced consumer understanding and awareness would help individuals more easily navigate the space of green finance products and services. This might also have a positive impact on the demand for green finance. As such, during the implementation of the strategy, CBJ will aim to integrate the green finance theme into a broader financial literacy agenda within financial inclusion measures to reach out to a wider audience. These measures, if they are applied in a way targeted to youth, women, low-income households, and micro- and small enterprises, are expected to contribute to inclusive green finance and overall financial inclusion objectives. CBJ (with relevant partners) will also consider integrating the green finance theme into the National Financial Education Program.

**An integral part of raising awareness and stimulating market dialogue will be CBJ's publications and knowledge notes in areas linked to green finance and climate change risk management.** For example, one of the stepping stones of this strategy is to conduct a comprehensive climate risk assessment for the financial sector. CBJ will aim to disseminate as much as possible the new knowledge and evidence developed from this exercise, which will enhance FIs' capacity through a better understanding of key climate risks and their impact on the stability and safety of the financial system in Jordan. Supervisory guidance, which is covered in more detail in chapter 8, will also contribute to greater awareness and consistency in FIs' action toward enhanced climate responsiveness.

**Moreover, having a national platform or task force for green finance is considered a good practice.** This platform could not only help coordinate the capacity-building initiatives and identify those that can be implemented jointly between multiple stakeholders, but also lead the national dialogue on mobilizing green finance (see chapter 11).

**Figure 4.5: Key entry points for raising awareness and facilitating capacity building within the financial sector in Jordan**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; JSC = Jordan Securities Commission; MOF = Ministry of Finance; MOENV = Ministry of Environment.

## 4.3 INCREASED INTERNATIONAL AND REGIONAL PARTICIPATION

### International networks for greening the financial sector

**CBJ aims to be increasingly involved in international networks focused on mainstreaming climate considerations in the central banking and financial regulatory ecosystem.** In 2021, CBJ became a member of the Central Banks and Supervisors Network for Greening the Financial System (NGFS).<sup>10</sup> CBJ has also been a member (since 2016) of the Sustainable Banking and Finance Network (SBFN). The adoption of this strategy by CBJ marks a significant stride toward alignment with NGFS's and SBFN's vision to promote and accelerate climate action within the financial sector. Additionally, it presents new opportunities for CBJ to deepen collaboration with NGFS and SBFN on various initiatives, including participation in specific workstreams and task forces. CBJ expects to dedicate more time and staff to active participation in the workstreams and task forces within the NGFS and SBFN.<sup>11</sup> Going forward, CBJ will consider becoming a member of the Sustainable Insurance Forum (figure 4.6).

### Launching a regional peer-learning forum

**To encourage sharing experience and lessons learned in the region, CBJ will initiate an institutional peer-learning forum for greening the financial sector between the Middle Eastern and North African central banks and financial regulators.** As more Middle Eastern and North African countries become involved in green finance and climate risk management for their financial systems, there will be a wealth of new knowledge to be developed and exchanged. It is particularly important to understand the impact and key takeaways of green finance and climate change policies in the financial sector. A peer-learning forum can also help central banks and financial regulators to increase coordination and consistency in the financial sector climate-related regulations and risk management and to deepen green finance markets in the region. Moreover, it can facilitate dialogue among regional central banks and financial regulators to strengthen the regional representation in global initiatives, such as the NGFS. The implementation of this peer-learning initiative can take many forms. For example, CBJ would be keen to conduct exchange visits and cooperate in implementing regional knowledge-sharing events or training programs.

**As another way to leverage regional synergies, CBJ expects to launch a regional central banks' and financial regulators' conference on greening the financial sector.** The main objective of the conference will be to convene regional peers from central banking and financial regulatory and supervisory areas to discuss the latest developments and to exchange lessons learned in greening the financial sector, focusing on developments most relevant to the Middle East and North Africa region. It will be an opportunity for CBJ to update the financial sector and regional peers on recent progress in the implementation of the strategy. The conference could be organized in different countries of this region every year.

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10 The NGFS is a group of Central Banks and Supervisors willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environmental and climate risk management in the financial sector, and mobilize mainstream finance to support the transition toward a sustainable economy. The NGFS released (in 2021) the "NGFS Glasgow Declaration: Committed to Action," in which NGFS members reiterated their willingness to contribute to the global response required to meet the Paris Agreement objectives. As a follow-up to the declaration, many NGFS members are publishing an individual pledge or strategy.

11 SBFN is a voluntary community of financial sector regulators, central banks, ministries of finance, ministries of environment, and industry associations from emerging markets committed to advancing sustainable finance for national development priorities, financial market deepening, and stability. The SBFN runs four working groups: (a) Measurement Working Group; (b) Sustainable Finance Instruments Working Group; (c) Task Force for Low-Income Member Countries; and (d) Data and Disclosure Working Group.

**Figure 4.6: Key entry points for increased engagement on the international and regional levels**



Source: Original figure for this strategy.

Note: NGFS = Network for Greening Financial Systems; SBFN = Sustainable Banking and Finance Network.





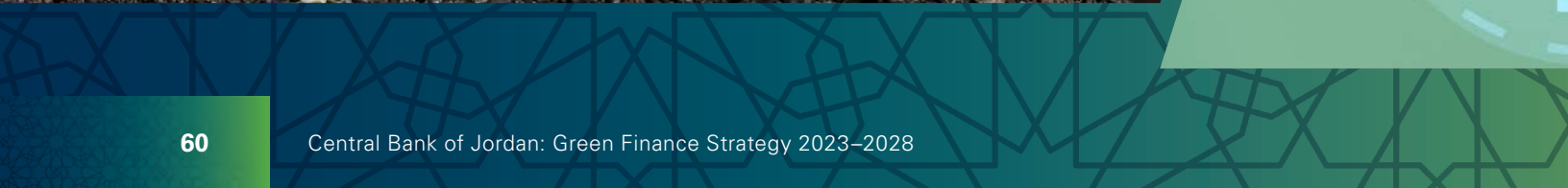
**Table 4.1: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>INSTITUTIONAL CAPACITY AND GOVERNANCE FOR GREENING THE FINANCIAL SECTOR IN JORDAN.</b>													
<b>Introduce an initial internal governance setup for the implementation of the strategy.</b>													
1.	Establish and operationalize a Climate Change Risk and Green Finance Division (CCRGFD) within CBJ.												
2.	Assign "green" focal points within each of the core departments within CBJ to support the implementation of the strategy within their respective functional areas.												
3.	Establish clear accountability lines for deliverables and activities related to greening the financial sector and implementing the strategy.												
4.	Initiate a National Platform or Taskforce for Green Finance Mobilization and become a core member of the National Climate Change Committee												
<b>Expand internal capacity building.</b>													
5.	Conduct a CBJ-wide mapping exercise to identify targeted capacity-building measures and topics on which enhanced knowledge and skills are needed for specific climate-related functions to be carried out by CBJ's different departments and divisions.												
6.	Adopt a capacity-building action program that follows the topics and types of capacity-building measures mapped to specific departmental functions and categorized into three levels: (a) foundational level, (b) advanced level, and (c) pro level.												
7.	Incorporate green finance and climate-related and other environmental risk management capacity-building objectives into a work program and professional development goals of staff in CBJ's core departments and divisions.												
8.	Identify and engage key national and international stakeholders and partners to cooperate and to coordinate the training and awareness-raising programs, with a focus on the three levels mentioned above (foundational, advanced, and pro).												
9.	Implement a capacity-building program with at least 20 capacity-building measures conducted over five years.												
<b>Facilitate capacity building within the financial sector.</b>													
10.	Conduct consultations with financial sector associations and FIs to identify and agree on the list of topics and types of capacity-building measures that will be implemented jointly by CBJ and financial sector participants.												
11.	Implement at least 10 joint capacity-building measures between CBJ and financial institutions.												
12.	In partnership with other authorities, integrate green finance topics into broader measures of enhancing financial literacy in Jordan (such as the National Financial Education Program).												
13.	Set up and operationalize a format for information and knowledge exchange between CBJ and FIs for the purpose of developing and operationalizing technical tools and models on green finance and climate risk assessment, monitoring, and management.												
14.	Issue at least three knowledge notes for the financial sector and the general public to raise awareness about green finance and climate change risks.												
<b>Increase international and regional participation.</b>													
15.	Assign CBJ staff as permanent members on at least three working groups within NGFS, SBFN, or other international networks.												
16.	Initiate a regional peer-learning initiative with central banks and financial regulators.												
17.	Initiate a regional conference for central banks and financial regulators on greening the financial sector.												
18.	Consider becoming a member of the Sustainable Insurance Forum.												

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; FIs = financial institutions; NGFS = Network for Greening Financial Systems; SBFN = Sustainable Banking and Finance Network.







# CLIMATE RISK ASSESSMENT FOR JORDAN'S FINANCIAL SECTOR

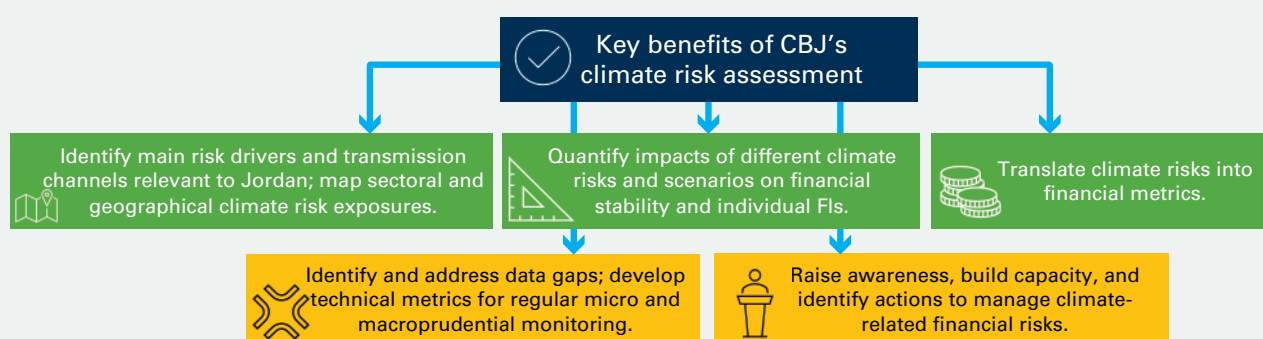
# 5





**Assessing the impact of climate physical and transition risks on the financial system** is one of the most urgent and prominent issues for central banks and financial regulators.<sup>12</sup> Climate risk assessment (CRA) for the financial sector will be one of the first stepping stones in greening the financial sector in Jordan (figure 5.1). CBJ plans for the greening of Jordan’s financial sector to be evidence based and anchored in a robust understanding of climate change risks and opportunities. Conducting a CRA will help to identify and quantify the impact of climate-related risk factors on financial stability and the safety of FIs under various climate scenarios, as well as to operationalize new knowledge generated during the CRA to inform CBJ’s activities and decision-making in financial stability, supervision, and other areas and to leverage this knowledge to raise awareness within the financial, private, and public sectors of how climate change can affect financial stability and the economy.

**Figure 5.1: Key benefits of CRA**



Source: Original figure for this strategy.

**Once the first CRA is completed, its selected components (scenario analysis, stress testing, selected concrete metrics) will be integrated into a regular macroprudential and microprudential supervision and financial stability analytical tool kit.** As such, this exercise will inform the work of many departments within CBJ, such as the Financial Stability Department, Banking Supervision Department, Insurance Supervision Department, Research Department, and other divisions and departments that will play a role in greening the financial sector. Globally, financial supervisors’ actions in assessing climate-related risks have significantly accelerated since 2019. Box 5.1 provides a short overview of selected examples of CRAs for financial sectors in different countries.

**Addressing data gaps is a critical step in greening the financial sector.** CRA will be instrumental for identifying existing data gaps and operationalizing systematic collection of climate-related information. These efforts will require broad interinstitutional coordination. As an example, in Malaysia, a Joint Committee on Climate Change, which includes both regulators and industry participants, developed a climate data catalog (supported by the World Bank), which involved extensive consultation about and validation of data in conjunction with other ministries (for example, Ministry of Natural Resources, Environment and Climate Change). In Jordan, more broadly, the activities linked to implementing a systematic data collection could also entail integration of natural capital into national and corporate systems of accounting.

12 Ivana Baranović et al., “The Challenge of Capturing Climate Risks in the Banking Regulatory Framework: Is There a Need for a Macroprudential Response?” *Macroprudential Bulletin* 15, European Central Bank, 2021. [https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202110\\_1~5323a5baa8.en.html](https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202110_1~5323a5baa8.en.html)

## Box 5.1: Selected examples of CRAs for the financial sector

**In the Middle East and North Africa region, Morocco, through the World Bank technical assistance program, has conducted a comprehensive climate risk assessment (CRA) for the banking sector which is expected to be published in 2023.** As indicated in the Morocco CCDR,<sup>a</sup> the direct and indirect exposure of Moroccan banks to physical risks is estimated around 35 percent of total assets. The catastrophic scenarios simulated in the assessment would lead to an increase in nonperforming loans (NPLs) and a decline in the capital adequacy ratio. For example, different drought scenarios could result in a systemwide increase in NPLs, ranging between 2.1 and 3.3 percentage points. Overall, the assessment suggested that the materialization of climate-related physical and transition risks could have considerable but manageable impacts on the Moroccan banking system, and a solid regulatory and supervisory framework could help mitigate those risks.

**There are numerous examples of climate-related risks to the financial stability analyzed as part of the Financial Sector Assessment Program (FSAP) or as stand-alone exercises.** These have been completed in, for example, Mexico, the Philippines, and South Africa (FSAPs) as well as in Colombia and Malaysia (stand-alone exercises). In Colombia, scenarios of various intensities of flooding at different points in time were investigated. With loan losses for Colombian banks ranging between 0.2 percent of total assets for the least vulnerable banks to 2.2 percent for the most vulnerable ones, these scenarios point to the relevance of timely climate adaptation and sophisticated land use planning.

**In 2021, the Bank of England asked banks and insurers to participate in an exercise called the Climate Biennial Exploratory Scenario (CBES).** Participating institutions used three scenarios to look at how climate-related risks could affect them. Two scenarios featured policies to limit global temperature rises; the third featured unchecked global warming. Each scenario examined the risks that could develop over 30 years. The participating institutions then modeled how their businesses could be affected in each scenario. As part of their findings, the Bank of England highlighted the following: (a) UK banks and insurers have made progress but still need to do much more to understand and manage their exposure to climate risks. The lack of available data on corporates' current emissions and future transition plans is a collective issue affecting all participating institutions. (b) At an aggregate level, UK banks and insurers are likely to be able to absorb the costs of transition that fall on them. Climate risks captured in the CBES are likely to create a drag on the profitability of banks and insurers, particularly if they are unable to manage these risks effectively. Some costs that initially fall on banks and insurers will ultimately be passed on to their customers. (c) Scenario analysis is still in its infancy, and there are several notable data gaps.<sup>b</sup>

**In 2017, the Dutch Central Bank (DNB) stated the objective of incorporating climate-related risks into its assessment frameworks and further developing climate stress testing.**<sup>c</sup> In 2018, DNB published a report presenting results of an energy transition risk stress test for the financial system of the Netherlands.<sup>d</sup> This exercise considered four scenarios, which were built around two main drivers of energy transition: government policy and technological developments. The timeline of these scenarios was five years. The stress test results suggested that financial institutions can mitigate their vulnerability to a disruptive energy transition by including energy transition risks in their risk management. The disruptive energy transition scenarios affect not only carbon-intensive industries, but also the economy at large. Thus, the total losses for financial institutions could be sizeable: up to 3 percent of the stressed assets for banks, 11 percent for insurers, and 10 percent for pension funds.

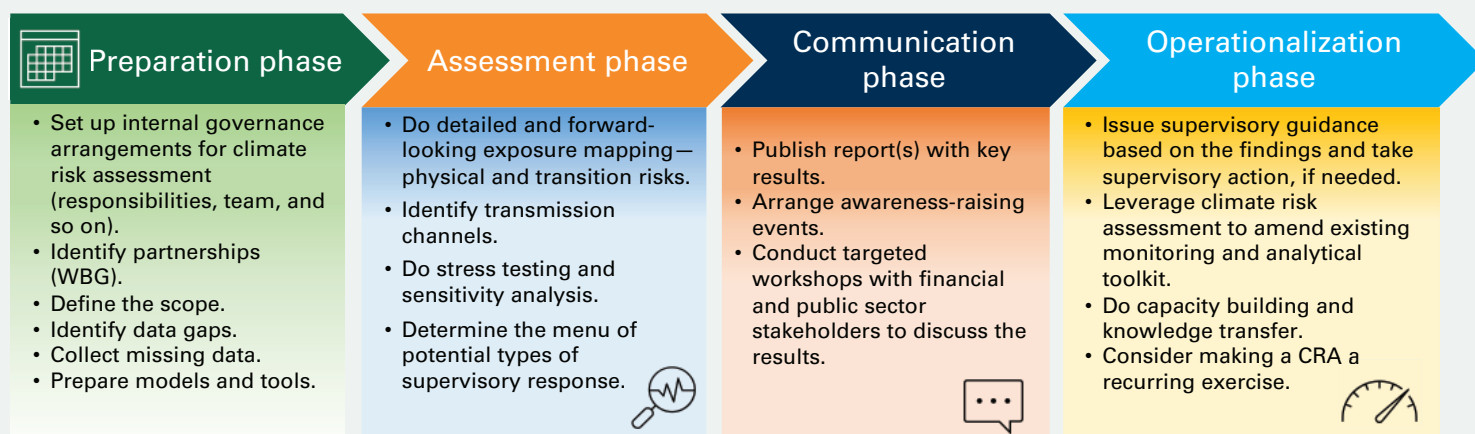
- a. World Bank Group, Morocco Country Climate and Development Report (Washington, DC: World Bank Group, 2022).
- b. Bank of England, "Bank of England Publishes Results of the 2021 Biennial Exploratory Scenario: Financial Risks From Climate Change" (news release, May 24, 2022), <https://www.bankofengland.co.uk/news/2022/may/boe-publishes-results-of-the-2021-biennial-exploratory-scenario-financial-risks-from-climate-change>; Bank of England, "Results of the 2021 Biennial Exploratory Scenario (CBES)," May 24, 2022, <https://www.bankofengland.co.uk/stress-testing/2022/results-of-the-2021-climate-biennial-exploratory-scenario>.
- c. Regelink, Martijn et al., "Waterproof? An Exploration of Climate-Related Risks for the Dutch Financial Sector (De Nederlandsche Bank, 2017), [https://www.unepfi.org/psi/wp-content/uploads/2018/08/Waterproof\\_An-exploration-of-climate-related-risks-for-the-Dutch-financial-sector.pdf](https://www.unepfi.org/psi/wp-content/uploads/2018/08/Waterproof_An-exploration-of-climate-related-risks-for-the-Dutch-financial-sector.pdf).
- d. Robert Vermeulen et al., "An Energy Transition Risk Stress Test of the Financial System of the Netherlands" (Occasional Studies 16-7, De Nederlandsche Bank, 2018), [https://www.dnb.nl/media/pdnpdalc/201810\\_nr\\_7\\_-2018\\_-an\\_energy\\_transition\\_risk\\_stress\\_test\\_for\\_the\\_financial\\_system\\_of\\_the\\_netherlands.pdf](https://www.dnb.nl/media/pdnpdalc/201810_nr_7_-2018_-an_energy_transition_risk_stress_test_for_the_financial_system_of_the_netherlands.pdf).

## 5.1 ROAD MAP FOR ASSESSING CLIMATE-RELATED RISKS IN JORDAN’S FINANCIAL SECTOR

The process of conducting a CRA is complex and requires a granular level of climate-related and environmental data, as well as the development and implementation of new technical tools. Capturing climate risk exposures and quantifying climate impacts to the financial sector may require detailed data from not only financial sector participants but also other stakeholders, such as national meteorology institutes, the Ministry of Environment, other line ministries, and more. While the importance of estimating climate change effects and their interconnection with financial risks has been extensively discussed, this area is still evolving and there is no consensus on the “best” metrics and methodologies. The breadth of these discussions is also implied by the fact that climate-related risks have some particular features (tipping points, nonlinearities, and so on) that do not easily fit into traditional risk models.

The CRA for Jordan’s financial sector will be conducted in four phases. Given the complexity of the exercise and the potentially significant impact that the results of this assessment can have on FIs’ behavior and perceptions of climate-related risks, allocation of sufficient time for the preparatory work and to implement well-designed measures for communication, reporting, and raising of awareness is crucial. CBJ will follow the high-level framework that is presented in figure 5.2 (note that this will be an iterative and nonlinear process). The CRA is expected to be completed by mid-2024.

Figure 5.2: Four phases of the CRA for Jordan’s financial sector



Source: Original figure for this strategy.

Note: CRA = climate risk assessment; WBG = World Bank Group.



## 5.2 PREPARATION PHASE

### Setting up governance and agreeing on partnerships

**Given the high degree of complexity of the assessment and the need to utilize special technical skills and models, CBJ will choose third-party partners (the World Bank Group) to provide foundational support in designing and implementing the CRA.** During the assessment and after it is concluded, one of the core objectives will be to build the capacity of CBJ teams and to transfer the respective knowledge about the CRA to CBJ staff (Financial Stability Department, Insurance Supervision Department, Microfinance Supervision Department, and the Financial Inclusion Division) to make sure that they are able to conduct similar exercises on their own in the future, as well as to integrate and operationalize selected components of the assessment into CBJ's analytical and supervisory tool kit. Within CBJ, the Financial Stability Department (FSD) will take the lead for the CRA.

### Scope of the assessment

**The scope of the CRA will have significant implications for the required resources and time to conduct the exercise, and it will be carefully discussed in the initial stages.** Some of the main components to be considered follow:

- **Types of institutions covered.** Depending on data availability, CBJ's objective will be to have the CRA span the banking sector, insurance companies, and MFIs. An advantage of covering different types of FIs is to potentially capture spillovers and interconnectedness in the financial sector; however, it also poses additional challenges linked to data availability and overall complexity of the exercise.
- **Types of risks covered.** CRA will cover both physical and transition risks. The inclusion of nature risk will also be considered, subject to data availability. Assessing physical risks in the financial sector will not only help CBJ and FIs to act in increasing resilience against climate shocks but can also contribute to raising awareness and improving disaster preparedness for climate adaptation in Jordan. Therefore, active cooperation with other national authorities will be important. To the extent possible, the exercise will also consider potential stranded asset risks, given the unique challenges with the power sector in the country as well as FIs' existing and potential exposure to energy-intensive activities.
- **Types of risk exposures covered.** Typically, the main exposure category is linked to climate effects on credit risks for banks (and potentially MFIs and leasing companies). Other types of risks, including market, liquidity, operational, and so forth will be explored, depending on the materiality of the risks and available modeling capacity (box 5.2).
- **Time frame.** Most supervisors use climate scenarios with an up to 30-year time horizon,<sup>13</sup> which aligns the projection with the Paris Agreement goal to limit global warming below 2°C compared to preindustrial levels. Long-term scenarios typically have a 10- to 30-year horizon. Notwithstanding their strengths, long-term scenarios also have some limitations, notably that they smooth out shorter-term fluctuations and can

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13 NGFS (Central Banks and Supervisors Network for Greening the Financial System). 2020. "The Macroeconomic and Financial Stability Impacts of Climate Change: Research Priorities." Technical document.

underestimate acute physical risks.<sup>14</sup> Thus it will be important in the CRA to analyze how the financial system in Jordan could be affected by significant physical climate change events or rapid climate policy transition that happens over shorter periods—for example, 5 or 10 years.

## Box 5.2: Liability risks

**NGOs and individuals are increasingly turning to the courts to sue public and private entities for failing to take appropriate climate action** and hold them accountable for their past actions, including for failing to comply with existing climate obligations and regulations.<sup>a</sup> For the financial sector, these are typically called “litigation risks,” which are overall not new. Some cases claiming that financial actors are failing to appropriately disclose and manage climate-related risks are being brought. Others involve alleged breaches of fiduciary duties—for example, when a bank’s directors continue or even increase financing to highly emission-intensive projects. CBJ will analyze whether litigation risks are material in Jordan and whether and how they could be reflected in activities linked to the climate risk assessment (in general, the litigation risks might be difficult to quantify).

- a. NGFS (Central Banks and Supervisors Network for Greening the Financial System). 2020. “The Macroeconomic and Financial Stability Impacts of Climate Change: Research Priorities.” Technical document.

## Data needs

**Granular data are central for a comprehensive and reliable CRA.** Data need can be split into four broad categories: (a) data on natural hazards (such as droughts, heat waves, frost; historical data, including on the impact, and any projections prepared by meteorology institutes, Ministry of Environment, and so on); (b) data on transition risk drivers (sectoral emission intensity; key drivers of low-carbon transition in Jordan); (c) data on multivariate distribution of FIs’ assets by economic sectors and activities and geographical location in Jordan; and (d) data enabling the calculation of metrics such as probability of default (PD), loss given default (LGD), NPLs, and the like. In conducting the CRA, CBJ will aim to maximize the use of data that FIs are already reporting for supervisory purposes. However, experience in other countries indicates that data that are collected for conventional supervisory purposes are not always sufficient. In that case, a special request will be sent to FIs to provide the missing data following the predefined data templates.

**One of the specific features of the data sets required for a CRA is their multivariate nature.** For example, it is important to be able to match the bank’s loan distribution by economic sector with its distribution by geographic location. Also, a sectoral distribution of loans and investments should be matched with the sectoral emission intensity data, which are necessary for assessing transition risks. CBJ will engage with other national authorities such as the Ministry of Environment, Ministry of Water and Irrigation, and National Center for Security and Crisis Management to identify and collect climate-related data that could be combined with CBJ’s financial sector data for CRA.

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14 NGFS (Network for Greening the Financial System), “Scenarios in Action. A Progress Report on Global Supervisory and Central Bank Climate Scenario Exercises” (NGFS, October 2021).

## 5.3 ASSESSMENT PHASE

### Methodology for the CRA

**One of the core objectives of the CRA is to estimate potential loss and impacts in the financial sector caused by different climate scenarios.** The main approaches utilized for this purpose are climate stress testing and scenario analysis. The latter is typically preceded by climate risk exposure mapping. Physical risk exposure mapping is done by combining granular information on location or sector of FIs' assets with a country's exposure to natural hazards. Transition risk exposure mapping estimates FIs' exposure to transition-sensitive industries.

**For physical risks,** extreme-event scenarios need to be defined. Possible physical direct and indirect damages associated with these extreme events need to be assessed. In general, physical risk drivers are usually linked to financial exposures by using a "damage function" (and a mapping exercise must be conducted), which defines potential impacts of specific hazards on the FIs' counterparts (for example, borrowers) and thus on financial assets. The effects on those assets can be integrated into risk models that estimate potential losses, which typically requires macroeconomic modeling to assess aggregated and sectoral climate impacts on the economy and the financial sector.

**For transition risks,** the channels of transmission of these risks to the financial sector, along with an exposure analysis, are qualitatively evaluated. This information is then used to inform the assessment of potential impacts on the financial sector, which is done through a vulnerability assessment. For example, how higher costs of GHG emissions (modeled via a carbon price) affect the financial health and debt service capacity of individual firms is estimated and then linked, for instance, to credit risk in the banking sector. Overall, transition risks can be driven by unanticipated changes in policy, technological disruptions, and market sentiment, and these transmission channels should be analyzed, acknowledging the uncertainty around the low-carbon transition pace and depth.

**Climate stress testing can follow a bottom-up or a top-down approach, or both.** With the bottom-up technique, CBJ will define the scenarios and ask the participating FIs to perform quantitative and qualitative analyses of how these scenarios would affect their balance sheets. The bottom-up method allows greater depth of the analysis, since FIs are expected to have more institution-specific data than are collected through the CBJ supervisory data set alone (box 5.3).

**However, CBJ will most likely use a top-down approach in conducting the CRA for the first time.** In a top-down exercise, CBJ would run all the calculations using the readily available data received from participating FIs through supervisory reporting (and potentially complemented with additional data collection for the CRA). Such an exercise would be easier to plan and faster to execute because it would be centrally managed and coordinated by CBJ. In the medium term, CBJ will consider a combination of the two approaches: an in-house desk-based analysis would enable CBJ to develop significant initial insights on the scenarios and their impact and develop benchmarks that can be used to confirm (or challenge) results from FIs' calculations in the bottom-up approach. Note that CBJ already conducts financial systemwide stress tests and sensitivity analysis as part of the macroprudential surveillance tool kit (see more in chapter 6), and this capacity will be leveraged for the CRAs.



### Box 5.3: Climate-related scenarios for stress testing

**A key benefit of climate stress testing methodologies is that they can address some of the uncertainties inherent to climate-related risks** by considering a wide range of possible future pathways, instead of attempting to predict an exact future outcome. Having well-defined multiple climate scenarios is necessary to fully assess the resilience of the financial system to climate-related risks. As an example, the set of global reference scenarios established by the Network for Greening the Financial System (NGFS)<sup>a</sup> provides a common starting point for central banks and financial supervisors doing climate risk analysis. These scenarios entail projections and aggregated and disaggregated data in three categories of potential future pathways (orderly, disorderly, and hothouse world). The NGFS scenarios rely on assumptions with respect to official sector policy (such as emissions targets or policy timing), technology (costs, availability of carbon sequestration technologies, and so on), society (for instance, population growth, diets, preferences), and various other modeling parameters. One practical limitation of NGFS scenarios is that they do not provide detailed information at the sector level.

a. See details at the NGFS scenarios portal: <https://www.ngfs.net/ngfs-scenarios-portal/data-resources-phase-2/>.

**Methodologies for the assessment of climate-related financial risks are still evolving.** Some supervisors are incorporating climate-related risk factors and scenarios in their conventional macro-stress testing models, which are typically used to measure how different macrofinancial shocks affect the financial system and which shocks may trigger systemic risk. Another approach is sensitivity analysis, which is used to evaluate the effect of a specific variable on economic or financial outcomes. Sensitivity analysis tends to be longer term in scope and can be used, for example, to evaluate potential implications on financial institution exposures caused by a concrete type of an extreme weather event or to estimate potential effects of a specific climate-related policy. Note that despite the importance of households in the loan portfolios of banks, climate-related stress testing methodologies for households are still underrepresented.<sup>15</sup>

**Central banks and financial regulators that have already worked on CRAs typically leveraged their existing models and stress testing tools to integrate climate change elements.** CBJ, with the World Bank team, will review the existing tool kit used by CBJ for macromodeling and financial stability purposes to identify entry points for integration of climate-related components. For example, banks in Jordan are running sensitivity analysis (bottom-up approach) to measure the impact of specific shocks on individual FIs (such as an increase in NPLs, changes in interest rates and stock prices, and so forth). CBJ also conducts top-down macro-stress testing to assess banks' ability to withstand shocks under different scenarios. In 2022, CBJ asked banks to run a preliminary sensitivity analysis to see how different climate change shocks could affect their balance sheets, through increased default rates, for instance.

**Stakeholder engagement will be part of CBJ's preparatory work for the CRAs.** CBJ will engage with stakeholders (ministries, research institutes, industry associations, and more) to gain additional insights for defining domestic climate change scenarios, identifying transition risk factors, and, most importantly, collecting additional data from different stakeholders to inform the assessment. This engagement may take the form of developing templates and

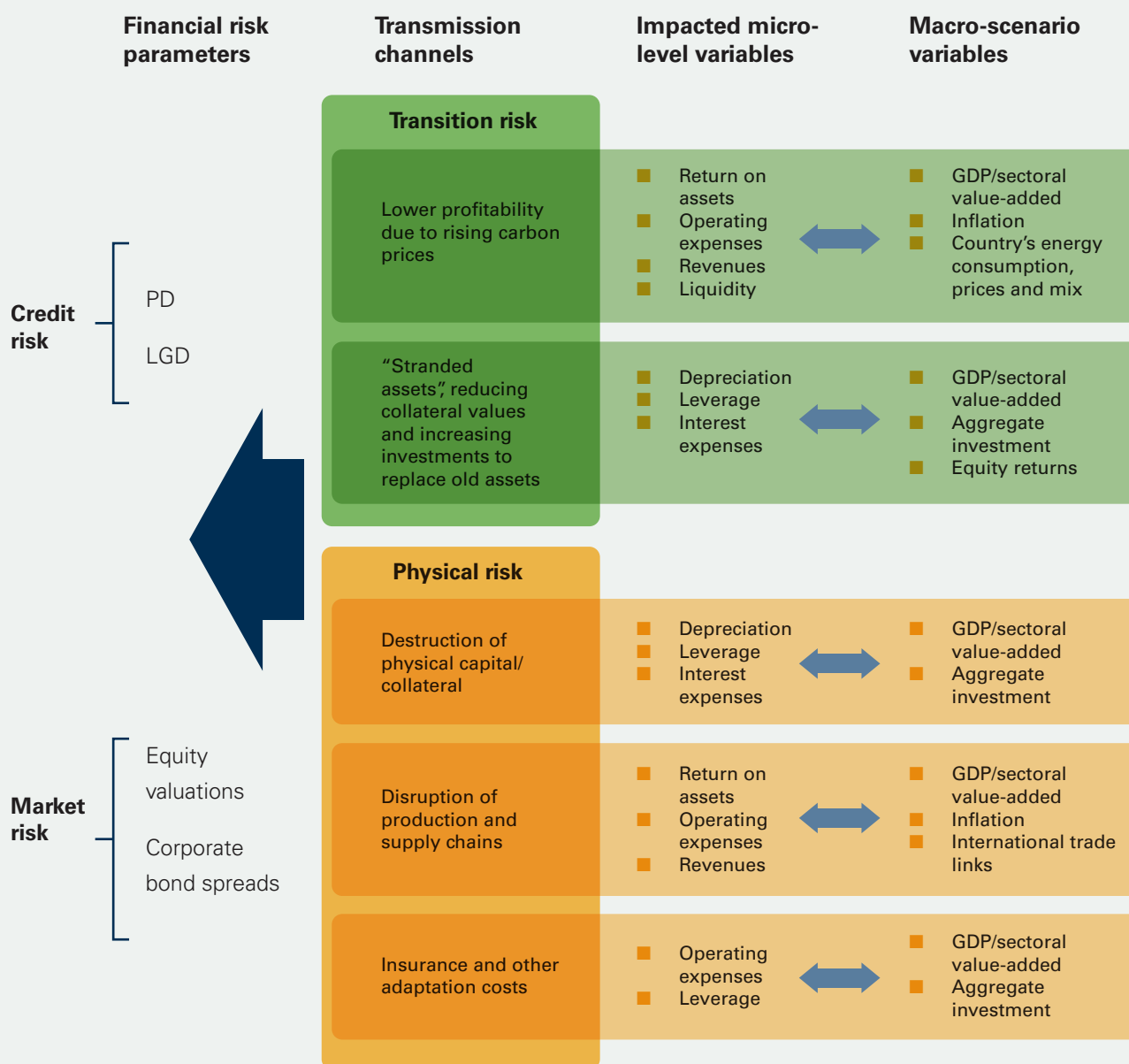
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15 "The Macprudential Challenge of Climate Change," ECB/ESRB Project Team on Climate Risk Monitoring (European Central Bank/ European Systemic Risk Board, July 2022), [https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate\\_report202207~622b791878.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate_report202207~622b791878.en.pdf).

requiring data on relevant exposures to physical and transition risks directly from supervised institutions, as well as discussing with national meteorology institutes and ministries potential data they could share. It will also be vital to coordinate with NGFS’s peers in the Scenario Design and Analysis working group to gather more information on the potential use of reference climate scenarios.

**Detailed and forward-looking exposure mapping and identification of transmission channels will be the first step in the CRA.** A schematic of mapping of micro- and macrovariables to transmission channels and financial risk parameters is provided in figure 5.3.

**Figure 5.3: Mapping physical and transition risks**



Source: "The Macroeprudential Challenge of Climate Change," ECB/ESRB Project Team on Climate Risk Monitoring (European Central Bank/European Systemic Risk Board, July 2022), [https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate\\_report202207~622b791878.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate_report202207~622b791878.en.pdf).

Note: GDP = gross domestic product; LGD = loss given default; PD = probability of default.

## Physical risks

**The methodology for physical risk exposure mapping includes the following main steps:** (a) assess current and historic vulnerability to climate hazards (baseline); (b) project climate change effects (using forward-looking scenarios); (c) estimate climate impact risks in each governorate under the baseline as well as climate change scenarios and identify economic sectors most affected by water scarcity and droughts, heat waves, floods, frost, and so on; (d) estimate FIs' loans and assets in these governorates or sectors; and (e) a potential step: estimate potential losses to borrowers under baseline and climate change scenarios to compute banks' exposure to risk using damage functions.

**Physical climate change risks are highly relevant to Jordan and are particularly linked to an already serious and increasing water scarcity.** Water scarcity not only has a straightforward negative impact and can lead to a large-scale disruption of economic activities such as agriculture, but also will likely have cross-cutting effects on the private sector's competitiveness, especially for water-intensive industrial sectors. Intensifying heat waves and overall uncertainty about potential future losses can also lead to greater precautionary savings and lower private sector investment. This can create a vicious cycle with profound financial impact on the private sector, including counterparts for the FIs, and thus on Jordan's financial stability.

## Transition risks

**The methodology for transition risk exposure mapping includes the following main steps.**

- Identify transition-sensitive industries: (a) sectors exposed to domestic policies, which requires estimation based on either current or forecast sectoral emissions, emission intensity, or estimated sectoral gross value added impact under carbon price assumptions; (b) sectors exposed to international policies; given Jordan's small open economy characteristics, sectors exposed to international carbon price developments (for instance, through the EU Carbon Border Adjustment Mechanism) or higher imported-input costs also need to be identified.
- Estimate FIs' loans and assets in these sectors.

**Jordan's contribution to global GHG emissions is very small; however, transition risks may still be significant to the financial sector.** Jordan is heavily dependent on fossil fuel imports, with limited natural resources. Energy is the key driver of economic development, as it is used to pump water throughout the country, to operate industry and transportation, and to drive other key services. Increasing costs of energy will require investments to reduce dependency on imports and to diversify the energy mix. This scenario will affect various sectors and activities, especially those that are unable to develop in a timely manner adaptation measures such as investment in renewable energy and reduction of energy consumption via increasing energy and broader resource efficiency.<sup>16</sup>

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<sup>16</sup> Ministry of Environment, Updated submission of Jordan's 1st Nationally Determined Contribution (NDC), October 2021.



## 5.4 COMMUNICATION AND OPERATIONALIZATION PHASES

**CBJ will follow a sequenced approach in using and applying the CRA results.** CRA for the financial sector requires an approach combining climate science, catastrophe risk modeling, macroeconomic modeling, and financial modeling. Because of climate change uncertainty and variability in the potential assumptions and methodologies applied, some central banks that have conducted climate stress testing or scenario analysis communicated that this exercise was done for exploratory purposes without direct implications for capital measures, at least in the short term. However, in the medium term, it is important to integrate these results into a broader supervisory tool kit and, potentially, policy frameworks.

**A wide range of options is available for CBJ to communicate and operationalize the results of the assessment.**

In the first phase, which will focus on raising awareness, CBJ will leverage different communication channels to spread the new knowledge generated during the CRA. For example, workshops and seminars will be held with stakeholders. Also, CBJ will issue a separate report presenting the main findings of the CRA. Later, findings from the CRA can be included in a dedicated section in the financial stability report. Communication of risk assessment and stress testing outcomes to relevant external stakeholders can benefit the financial and public sectors by improving awareness of climate risks and their impacts. This may encourage banks and other institutions to strengthen their risk management practices and foster further research, particularly where new pockets of risk have been identified.

**In the second phase, CBJ will consider issuing a supervisory guidance listing recommendations for the financial sector on good practices for management and mitigation of the climate-related risks that were identified as most material in Jordan.**

In the longer term, results of the risk assessment exercise can contribute to new regulation. Currently, banks are already expected to include all the material risks, including climate considerations and any other relevant findings, in their Internal Capital Adequacy Assessment Program, in accordance with the objectives and internal policies and procedures of the current stress testing regulatory framework. Therefore, CRA will complement existing supervisory processes by providing additional insights on material risk factors.

**CRA conducted by CBJ will generate new knowledge that can be useful for other stakeholders in their climate change activities.**

For example, the stress testing will take into consideration how climate change risk drivers such as temperature rise, droughts, frost, and flash floods, or carbon shadow pricing on energy and other commodities, could affect the level of output of the overall economy by changing livestock production yields or the carrying costs of industry and transportation sectors, and an economy's ability to grow in the long term if the changes in climate variables are persistent. All of these considerations can have significant country-level implications and could benefit the decision-making of ministries or other public authorities.

**The first CRA for Jordan's financial sector will set the stage for a broader framework of climate risk identification, assessment, monitoring, and management.**

As such, CBJ will aim to operationalize and integrate certain components of the CRA into CBJ's regular activities. It will be crucial to ensure capacity building and knowledge transfer to multiple areas and staff within CBJ, including more in-depth training (as part of the capacity-building program discussed in chapter 4) on physical and transition risk analysis to explore further how to integrate material risks into the CBJ's macro- and microprudential framework of CBJ.

**The operationalization phase will require taking stock of CBJ’s existing technical tool kit used in different functional areas and examining how these metrics can be complemented with climate risk elements.** The CRA, with certain adjustments to reflect new knowledge, data, and tools, can become a regular exercise conducted by CBJ staff. At some point, once the evidence base is strong, CBJ will explore how to best integrate CRA results into a financial sector regulatory framework. For example, the Bank of England follows the three-step approach for key work on climate-related risks: phase 1, identifying climate-related risks and assessing the impact of climate change on the financial sector; phase 2, embedding the information into frameworks (setting supervisory expectations, letter to CEOs, and so on); and phase 3, actively supervising and reflecting on the policy framework (letter to CEOs on effective and less effective practices, report on climate-related risks and regulatory capital frameworks, and so forth).<sup>17</sup> CBJ aims to implement a similar approach.



17 Bank of England, “Bank of England Report on Climate-Related Risks and the Regulatory Capital Frameworks” March 13, 2023, <https://www.bankofengland.co.uk/prudential-regulation/publication/2023/report-on-climate-related-risks-and-the-regulatory-capital-frameworks>.

**Table 5.1: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>CLIMATE RISK ASSESSMENT</b>													
<b>Preparation phase</b>													
1.	Set up project governance arrangements, including assigning a core team to lead the climate risk assessment (CRA) with the World Bank.												
2.	Conduct initial capacity building on foundational concepts of climate risk assessment.												
3.	Identify data gaps and collect missing data, including through special data requests to FIs and public authorities, following predefined data templates. After screening the data availability, firm up the scope of the assessment.												
4.	Engage with stakeholders—including FIs, relevant ministries, research institutes, and so on—to inform the development of climate scenarios and to collect data.												
5.	Review the CBJ's existing analytical tool kit to determine which models and methodologies can be used for the climate risk assessment. Make necessary adjustments to available climate-focused models to fit Jordan's circumstances; develop new models if needed.												
<b>Assessment phase</b>													
6.	Conduct an exposure mapping of physical and transition risks, using data on the sectoral and geographical distribution of FIs' balance sheets.												
7.	Develop a set of climate scenarios. Identify key climate transmission channels for Jordan's economy and financial sector.												
8.	Publish an interim report with the findings from exposure mapping.												
9.	Conduct a stress testing and sensitivity analysis based on the defined climate scenarios.												
10.	Determine the supervisory response to address findings of the assessment linked to material climate-related financial risks, including potential guidance or regulations for FIs and other public authorities.												
<b>Communication phase</b>													
11.	Publish a final report discussing key results and findings from the assessment.												
12.	Organize targeted workshops with FIs and media outreach events to share the results with internal and external stakeholders.												
<b>Operationalization phase</b>													
13.	Transfer knowledge and build capacity of CBJ staff to conduct CRA on a regular basis.												
14.	Prepare and adopt an internal manual or roadmap on integrating climate considerations into the internal analytical tool kit for regular use in micro and macroprudential areas.												
15.	Prepare a roadmap for integrating material risks into the broader prudential supervisory and policy framework.												
16.	Develop an information infrastructure and requirements to obtain climate data on a systematic and regular basis.												
17.	Conduct workshops with financial institutions to share in-depth technical aspects of the climate risk assessment.												

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; FIs = financial institutions.







# **INTEGRATING CLIMATE CONSIDERATIONS INTO CBJ'S FINANCIAL STABILITY FRAMEWORK**





## 6.1 WHY IS CLIMATE CHANGE IMPORTANT FOR FINANCIAL STABILITY?

**The materialization of physical and transition risks could result in financial systemwide shocks, posing a threat to financial stability beyond the idiosyncratic effect on individual FIs.** As such, climate-related risks may require the application of a macroprudential framework or measures that increase resilience and limit the buildup of systemic climate-related financial risks in the financial system.<sup>18</sup>

**An increase in the cost of carbon, through a carbon tax or other market mechanisms, affects the valuation of firm-level assets and firms' creditworthiness.** Like transition risk, a clustering of physical hazards may also exacerbate financial stability risks due to firms' vulnerability to multiple hazards. Such interdependencies, together with economic and financial networks, can amplify risks and need to be considered for prudential regulation and policy purposes. For banks, apart from materializing credit losses, climate risk may transmit to the banking sector through risk assessment of portfolios in terms of adjustments of risk-weighted assets.<sup>19</sup>

**The following examples illustrate how climate change can increase the probability of asset mispricing and greater nonfinancial and financial leverage** in the financial sector, which can directly contribute to financial instability:<sup>20</sup>

- **Information asymmetry:** FIs currently have limited information on climate-related exposures among financial and nonfinancial companies (implementation of climate-related disclosure and reporting standards is still in early stages). Little institutional knowledge of how climate change could affect different exposures in the balance sheets can lead to broad repricing and fire sales when an actual climate-related shock occurs and the "actual" risks are unveiled, leading to contagion risks in the financial system.

18 Ivana Baranović et al., "The Challenge of Capturing Climate Risks in the Banking Regulatory Framework: Is There a Need for a Macroprudential Response?" Macroprudential Bulletin 15, European Central Bank, 2021, [https://www.ecb.europa.eu/pub/financial-stability/macprudential-bulletin/html/ecb.mpbu202110\\_1~5323a5baa8.en.html](https://www.ecb.europa.eu/pub/financial-stability/macprudential-bulletin/html/ecb.mpbu202110_1~5323a5baa8.en.html).

19 "The Macroprudential Challenge of Climate Change," ECB/ESRB Project Team on Climate Risk Monitoring (European Central Bank/European Systemic Risk Board, July 2022), [https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate\\_report202207~622b791878.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate_report202207~622b791878.en.pdf).

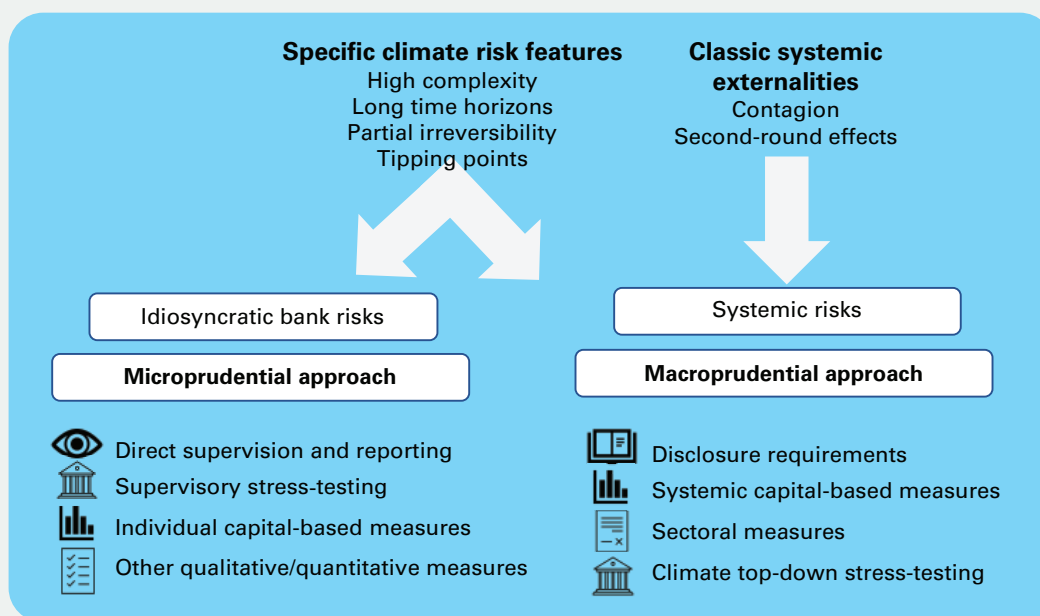
20 "The Macroprudential Challenge of Climate Change."



- **Mispricing:** Some studies suggest that even well-informed FIs may underestimate the likelihood of large shocks related to climate change, particularly from physical risks. Such pervasive underestimation could lead to excessive levels of leverage and, combined with the uncertainty around the timing of climate change, shocks could contribute to asset price bubbles.
- **“Mis modeling.”** Changes in climate such as risk of fire and floods can happen rapidly, and historical data may be of limited use in forecasting future climate scenarios. This implies that climate-related economic and financial models can have significant limitations over longer time horizons, and if many financial system participants are exposed to mis modeling, then hidden climate factors may be systematically correlated across participants in the economy and financial system.

**With its systemwide perspective, a macroprudential approach to climate risks, as in the case of other systemic risks, could help address risks that cut across sectors and limit arbitrage (figure 6.1).**<sup>21</sup> From a big-picture perspective, climate change can be treated as one of the systemic risks to financial stability. Therefore, CBJ will consider whether and how best to integrate the respective climate change risk factors into its analytical tool kit and, once material climate-related risks are identified and assessed, into the macroprudential policy tool kit. As evidence on the systemic dimension of climate-related financial risk accumulates, so too does the case for a macroprudential response.<sup>22</sup> This chapter addresses how CBJ will incorporate climate considerations into its financial stability activities.

**Figure 6.1: Macroprudential approach for climate risks**



Source: Ivana Baranović et al., “The Challenge of Capturing Climate Risks in the Banking Regulatory Framework: Is There a Need for a Macroprudential Response?” Macroprudential Bulletin 15, European Central Bank, 2021, [https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202110\\_1~5323a5baa8.en.html](https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202110_1~5323a5baa8.en.html).

21 “The Macroprudential Challenge of Climate Change.”

22 “The Macroprudential Challenge of Climate Change.”

**In Jordan, there are several significant climate change transmission channels that make it important for CBJ to keep an eye on climate factors from the financial stability perspective.** Given the size of Jordan’s financial sector (more than 180 percent of GDP), climate change impact on financial risks (such as an increase in the level of nonperforming loans (NPLs) due to severe droughts) can create strong feedback loops on the real economy (for instance, through reduced investment financing). Banks are significant investors in government of Jordan securities; therefore, if climate change adds to already high public debt levels, this could lead to indirect financial risks to banks by reducing the value of collateral that banks can use to access liquidity. Climate change can have direct implications for financial sector stability in Jordan through the elevated credit risk from borrowers most vulnerable to water stress and those with energy as one of the largest inputs. In addition to credit risk, climate change can translate into increased liquidity and market risks and operational risks.

## 6.2 STATE OF THE ART OF THE CLIMATE-RELATED CONSIDERATIONS IN MACROPRUDENTIAL FRAMEWORKS

**Global discussions on the role of the macroprudential measures in tackling climate-related risks for financial stability have progressed over the past few years.** The ongoing debate covers a wide range of questions, such as whether and how to integrate climate-related factors into macroprudential frameworks, how to apply these measures to avoid unintended consequences, and what potential impact these measures would have on mitigating climate risks and on the broader financial ecosystem.

**Many international organizations are exploring macroprudential and microprudential policy options for addressing climate risks** (for example, the European Commission, European Systemic Risk Board, European Banking Authority, Basel Committee on Banking Supervision, and others).<sup>23</sup> However, there are many open questions when it comes to addressing climate-related financial risks through macroprudential policy measures. For example, a recent Bank of International Settlements Future Services Institute (BIS FSI) Briefs report emphasized that the design and implementation of the macroprudential framework should be informed by financial stability considerations alone: while this framework would certainly interact with supervisory measures imposed on each financial institution and general climate-related government policies, its deployment should always be predicated on the assumption that climate-related risks to financial stability cannot be addressed by microprudential requirements alone.<sup>24</sup>

**In an example from the international scene, in Canada there have been ongoing discussions of potential adjustments in banks’ capital buffers based on climate-related exposures.** The draft law was proposed in 2022, including a certain risk weight on any loan, bond, or derivative exposure to new fossil fuel resources or infrastructure. However, while no specific changes have been made so far, the financial regulator in Canada issued (in March 2023) the Climate Risk Management Guidelines, which require, for example, FIs to incorporate climate-

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23 Baranović et al., “The Challenge of Capturing Climate Risks in the Banking Regulatory Framework.”

24 Rodrigo Coelho and Fernando Restoy, “Macroprudential Policies for Addressing Climate Related Financial Risks: Challenges and Trade-Offs” (FSI Briefs 18, Financial Stability Institute, Bank for International Settlements, Basel, Switzerland, April 2023), <https://www.bis.org/fsi/fsibriefs18.pdf>.

## Box 6.1: How financial regulators consider climate-related factors in their financial stability monitoring frameworks—evidence from the FSB survey

In 2020, the Financial Stability Board (FSB) conducted a stocktaking exercise to map the experiences of financial authorities in integrating climate-related risks into their financial stability monitoring activities.<sup>a</sup> Key results of this stocktaking are discussed in this box.

**Twenty-four of 33 survey respondents reported that they either already do or are planning in the near future to consider climate-related risks in their financial stability monitoring.** Some authorities present analysis of climate-related risks in their regular surveillance publications (for example, financial stability reports). Others had undertaken ad hoc analysis of climate-related risks—for example, in the form of research or occasional papers or as part of “special feature” boxes in their financial stability reports.

**Some authorities report having conducted work to quantify climate-related risks to financial stability.** Such estimates are generally limited in scope. In the case of physical risks, studies often focus only on the risks that are most pertinent to the jurisdiction in question—for example, flooding in low-lying countries. Several authorities report that estimating the effect of severe weather events on financial exposures (for instance, via estimates of probability of default) is highly complex. Some authorities considered how losses faced by lenders might prompt them to restrict their lending, particularly to creditors whose assets or activities are concentrated in certain geographies. This could put further downward pressure on asset values and economic activity, which in turn might exacerbate the impact of further physical risks on the financial sector. Some authorities consider how reductions in insurers’ solvency might also prompt a reduction in their underwriting activity (or a large increase in its cost), which could also have a depressing effect on economic activity.

**Authorities vary considerably in the nature and extent of supervisory response to the monitored climate-related financial risks. Some authorities report having focused on building awareness of climate-related risks,** both among their staff and among institutions they supervise, and on setting expectations for management of climate-related risks. Twenty-seven survey respondents have undertaken such external outreach, including liaising with institutions and experts to improve understanding of issues in this area. Some have also requested that institutions conduct stress tests of their resilience to climate-related risks and set out expectations in terms of their disclosures.

a. FSB (Financial Stability Board). 2020. “Stocktake of Financial Authorities’ Experience in Including Physical and Transition Climate Risks as Part of their Financial Stability Monitoring.”

related risks into their internal capital adequacy assessment process (ICAAP) or own risk and solvency assessment (ORSA) process. Another separate principle requires FIs to maintain sufficient capital and liquidity buffers for their climate-related risks.<sup>25</sup>

**Increasingly, financial regulators are integrating climate-related factors into their macroprudential surveillance tool kit.** Box 6.1 summarizes the results of the Financial Stability Board’s survey of national financial regulators on climate-related considerations in the financial stability area.

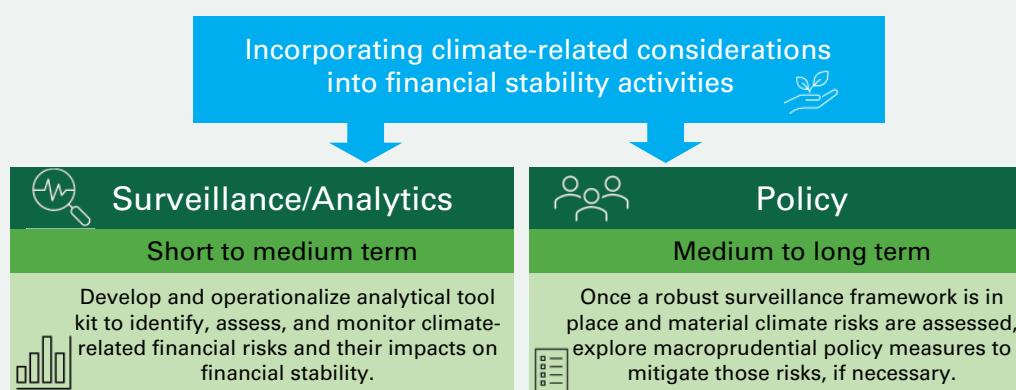
25 Office of the Superintendent of Financial Institutions, Canada, “Climate Risk Management,” Guidance, March 2023, <https://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gj-ld/Pages/b15-dft.aspx#toc1.4>.



## 6.3 INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S FINANCIAL STABILITY ACTIVITIES

**Analytics and policies are two main areas that CBJ will address to integrate climate considerations into the financial stability framework.** The phase-in of these two areas will be gradual, with (a) a short- to medium-term focus on integrating climate-related factors into a financial stability surveillance tool kit and processes and (b) a medium- to longer-term focus on revising the macroprudential policy toolbox to explore measures that could be activated to mitigate material climate-related systemic risks, if needed (figure 6.2).

**Figure 6.2: Two main areas of CBJ's climate-related considerations in the financial stability framework**



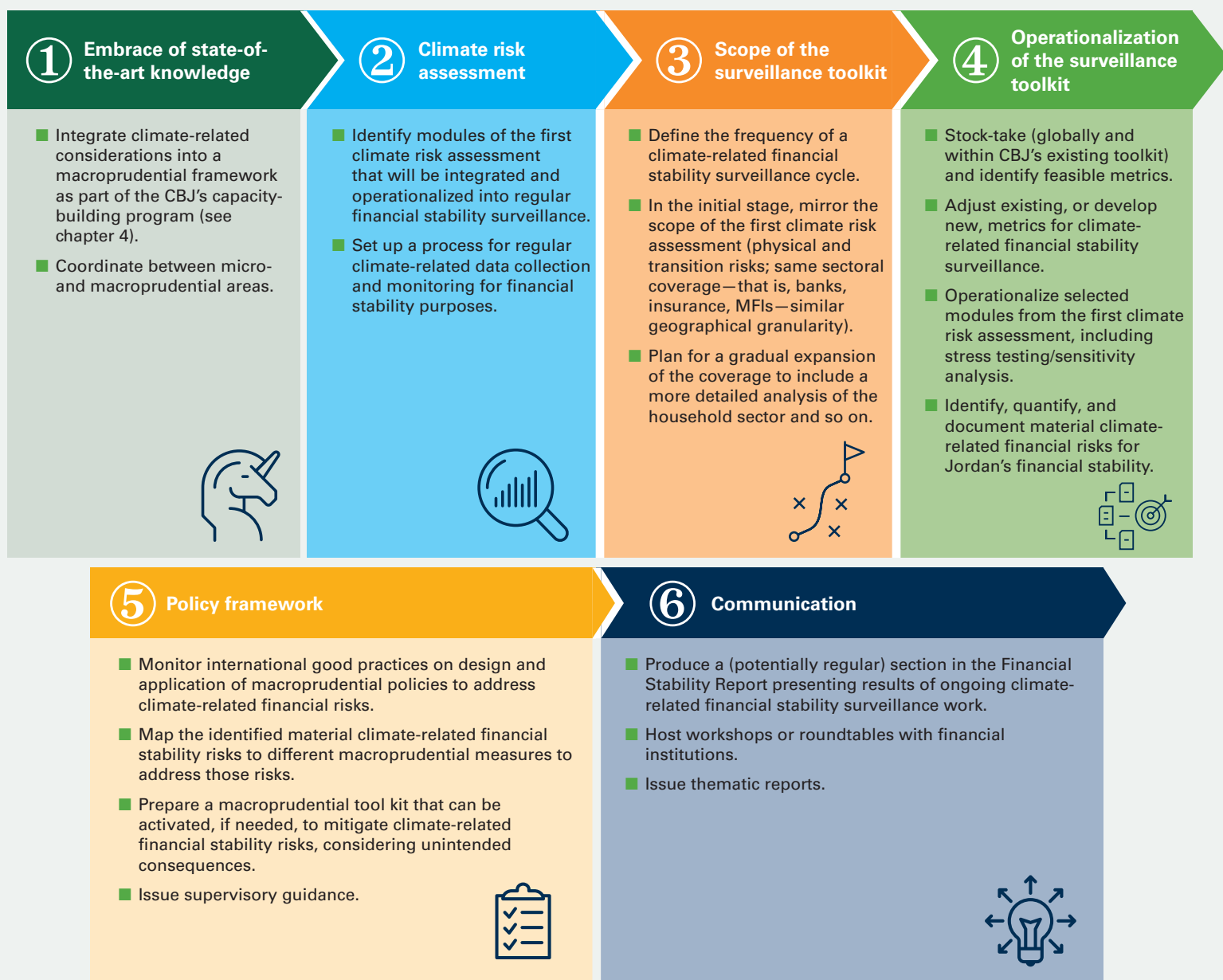
Source: Original figure for this strategy.

### Box 6.2: Current financial stability arrangements at CBJ

**The Central Bank of Jordan (CBJ's) Financial Stability Department was established in 2013 and is implementing CBJ's macroprudential mandate, covering both macroprudential policy and surveillance activities.** It seeks to assess and identify systemwide vulnerabilities early on and to respond to stress events as they occur. CBJ communicates the results of financial stability surveillance through the regular financial stability report and other policy guidance instruments, which provide information on the following: (a) financial risks and resilience on the macro level of the financial system, based on analysis of capital and liquidity ratios under multiple shock assumptions on the asset and liability side of FIs; (b) the strength and soundness of nonfinancial corporates, households, and nonbanking FIs; (c) the stability of real estate and financial markets and monitoring the extent to which prices are consistent with fundamentals; and (d) the potential impact of nonfinancial corporates and household sectors' indebtedness level on financial stability.

**CBJ already conducts financial systemwide stress tests and sensitivity analysis as part of the macroprudential surveillance tool kit.** This includes sensitivity analysis prepared individually by banks (bottom-up approach) to measure the aggregate impact of potential changes in separate risk factors such as an increase in NPL ratio, change in interest rates, and so on. CBJ also conducts top-down macro stress testing, in which a series of scenarios is used to assess banks' ability to withstand shocks. The following subsections describe the steps CBJ will take to enhance the climate responsiveness of the financial stability framework, as shown in figure 6.3.

**Figure 6.3: High-level sequencing of key milestones for integrating climate-related considerations into financial stability activities**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; MFI = microfinance institution.

## 6.4 PHASE 1: EMBRACING STATE-OF-THE-ART KNOWLEDGE

**Global knowledge and country experiences of climate-related macroprudential analytics and policy are evolving fast, and CBJ will actively monitor these developments to integrate them into domestic financial stability activities.** This will be done through several means, such as by including the respective training as part of the capacity-building program (chapter 4) and also by participating in international networks, such as the Network for Greening Financial Systems (NGFS) and the Sustainable Banking and Finance Network (SBFN), which are at the forefront of green finance-related work. As discussed in chapter 4, CBJ's Climate Change Risk and Green Finance Division within the Financial Stability Department will be leading the cross-sectional coordination for mainstreaming climate considerations into CBJ's different functional areas, including for financial stability work.

## 6.5 PHASE 2: LEVERAGING THE FIRST CLIMATE RISK ASSESSMENT FOR FINANCIAL STABILITY SURVEILLANCE

**The first climate risk assessment will set the stage for integrating climate-related financial risk analysis into CBJ's macroprudential surveillance tool kit.** As part of this exercise, CBJ will identify data gaps and will address at least some of them. However, to operationalize climate-related analytics, models, and metrics for financial stability purposes, CBJ will have to do systematic collection of some data, and this effort may require more time and close coordination led by the Climate Change Risk and Green Finance Division. Another key task will be to identify metrics and modeling components used in the assessment that could be used in regular financial stability surveillance work. In addition to providing a technical base for macroprudential surveillance, the climate risk assessment's findings will directly inform prioritization of material climate-related risks for financial stability monitoring.

## 6.6 PHASE 3: SCOPING THE CLIMATE-RELATED FINANCIAL STABILITY SURVEILLANCE TOOL KIT

**CBJ's current financial stability surveillance activities encompass not only FIs, but also households, nonfinancial corporates, and the external sector.** This wide spectrum of players with a potential impact on financial stability provides many entry points for a holistic framework to assess and monitor climate-related financial stability risks. However, at the same time it adds to the overall complexity, and it will be important to increase the coverage of the climate-related macroprudential framework gradually, not only because CBJ will follow the proportionality principle to focus on the most material risks and sectors, but also because climate change methodologies beyond FIs are still in early stages, including for the households sector, as mentioned in chapter 5. CBJ will also consider the most appropriate frequency for the climate-related financial stability surveillance cycle. For example, given the longer-term nature of climate-related financial risks, monthly (or even quarterly) monitoring would likely be too frequent.



**In climate-related financial stability surveillance activities, CBJ will aim to mirror the scope of the first climate risk assessment**, subject to gradual expansion when the remaining data gaps are addressed. The scope incorporates the following: (a) **Types of risks**. The macroprudential surveillance tool kit will entail assessment and monitoring of both physical and transition risks. (b) **Forward-looking methodologies**. The climate-responsive financial stability framework will require an increased focus on forward-looking methodologies, enabling **analysis** of the potential impacts of different climate change scenarios. (c) **Sectoral coverage (financial sector)**. Following the proportionality principle, the focus initially will be on the banking sector, followed by microfinance institutions and the insurance sector. (d) **Sectoral coverage (real economy)**. Results of the first climate risk assessment will guide CBJ in selecting economic sectors (manufacturing, trade, agriculture, tourism, and so on) that require more attention and granularity from the perspective of the climate-related financial stability assessment. For example, macroprudential monitoring can identify threats to financial stability arising from excessive credit expansion to sectors that are the most vulnerable to climate change, whether they are highly emission-intensive sectors or those sensitive to physical climate change hazards.

## 6.7 PHASE 4: OPERATIONALIZING THE CLIMATE-RELATED FINANCIAL STABILITY SURVEILLANCE TOOL KIT

**The main questions to be answered in the climate-related macroprudential surveillance work are how, when, and to what extent climate-related financial risks can become a systemic threat to financial stability.**

The spectrum of potential metrics and models is expanding fast; however, choosing the right one is still a challenge, partly because of limited data availability. The Bank of England's executive director for financial stability strategy and risk, Sarah Breeden, stated in 2020: "We found identifying useful metrics to set targets for [climate] risk management the most difficult aspect."<sup>26</sup> The available metrics and approaches range from simple mapping of sectoral and geographical distributions of financial sector exposures to the level of climate change vulnerability of each sector or geographical location, to more complex metrics such as transition-to-credit risk intensity (table 6.1).

**There are three main methods that can be used for climate-related financial stability surveillance:** (a) exposure analysis, (b) stress testing (analyzing how different climate scenarios can affect financial stability), and (c) sensitivity analysis (analyzing the isolated effect of incremental variations of physical and transition risks in predefined variables). The extent to which each of these methods will be operationalized will be informed by the first climate risk assessment. To operationalize these approaches, especially when it comes to macro-type models, the Financial Stability Department will cooperate with the Research Department and other teams engaged in macroeconomic modeling (box 6.3). This will allow CBJ to better capture potential spillover effects arising from the interconnectedness between the financial sector and the real economy. While credit risk will be prioritized in initial stages under the climate-related macroprudential tool kit (reflective of the dominant role banks have in Jordan's financial system), CBJ will also use metrics to identify and monitor climate-related risk factors linked to market, liquidity, and operational risk.

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26 Sarah Breeden, "Leading the Change: Climate Action in the Financial Sector" (speech, UK Finance Webinar, London, July 1, 2020). <https://www.bankofengland.co.uk/speech/2020/sarah-breeden-leading-the-change-climate-action-in-the-financial-sector>.

**Table 6.1: Selected examples of metrics to measure and monitor climate-related financial risks for financial stability purposes**

Metric	Summary
Transition-to-credit risk intensity	This indicator combines banks' loan exposures with firms' emissions and probabilities of default, capturing the overall riskiness of these firms from a lenders' perspective. Overall, the higher a firm's contribution to the score aggregated at the bank level, the greater the mutual amplification of transition and credit risk on that particular exposure, assuming that the probability of default does not capture the full extent of the transition risk.
Physical-to-credit risk intensity	The metric can be calculated by replacing (firm-level) emissions (in the above metric) with (firm-level) vulnerability to natural hazards using physical-risk scores.
Loan carbon intensity	The metric is defined as emissions over credit or loans in a financial portfolio and characterizes the emission efficiency of credit exposures. The loan-level metric can be used to calculate the loan-weighted emission intensity at the sectoral or portfolio level.
Metrics based on input-output data	Provide a snapshot of the intersectoral real-economy interdependencies for climate-related demand and supply shocks.
Distribution of the loan-to-value ratio for real estate loans by transition risks	Monitors risk exposure under the assumption that real estate owners may need to make large investments to properties to comply with higher energy efficiency standards.
Energy-to-income ratio	Provides an initial estimate of household or bank exposure to transition risks.

Source: "The Macroeprudential Challenge of Climate Change," ECB/ESRB Project Team on Climate Risk Monitoring (European Central Bank/European Systemic Risk Board, July 2022), [https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate\\_report202207~622b791878.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate_report202207~622b791878.en.pdf).

### Box 6.3: Macroeprudential surveillance, macroeconomic modeling, and monetary policy monitoring

**Greening the financial sector in Jordan will require a multidisciplinary approach.** There will be many instances for CBJ's Research and Open Market Departments to cooperate with the Financial Stability Department to analyze how climate-related financial risks and opportunities jointly affect financial stability, the real economy, and monetary policy and its transmission.

**While significant progress in identifying channels of transmission of climate-related risks to the real economy has been made, significant work remains.** According to the Network for Greening Financial Systems, further progress needs to be made in the integration of climate factors into standard macroeconomic models. Despite some exceptions, dynamic stochastic general equilibrium (DSGE) models,<sup>a</sup> often used by central banks in macroeconomic and monetary policy analysis, are normally abstract from climate change and related policies. One avenue is to develop short-term models for output and inflation within the time horizon of monetary policy (two–three years) that account for climate-related impacts, including natural disasters, labor supply effects, and disruptions to supply chains and international trade. Such assumptions might support calibration of macroprudential policy tools in Jordan.<sup>b</sup>

**Long-term modeling of potential productive capacity and economic growth is essential for monetary policy.** To that end, it is important to capture the impact of global warming on physical, natural, and human capital stock, labor supply, and productivity. In particular, further work can be devoted to the modeling of the impact on total-factor productivity and of climate-related migration, which may be critical for the Middle East and North Africa region and Jordan in particular.

a. Patrick Bolton et al., "The Green Swan: Central Banking and Financial Stability in the Age of Climate Change" (Bank for International Settlements, Basel, Switzerland, January 2020) and Celso Brunetti et al., "Climate-Related Financial Stability Risks for the United States: Methods and Applications" (Federal Reserve Board, Washington, DC, 2022) provide detailed discussion of the DSGE modeling strategy.

b. NGFS (Central Banks and Supervisors Network for Greening the Financial System, "The Macroeconomic and Financial Stability Impacts of Climate Change: Research Priorities," June 2020).

## 6.8 PHASE 5: EXPLORING ENTRY POINTS FOR MACROPRUDENTIAL POLICY MEASURES

**In line with a major theme in the ongoing public debate, the core principle that CBJ will follow is that the primary objective of macroprudential policy measures is to safeguard financial stability.** While these measures, if applied with certain climate-related criteria, would affect the behavior of financial sector participants toward benefiting the climate, this change should be driven mainly by the need to adjust the level or structure of climate-related financial stability risks. This action could indirectly complement other national policy measures, such as a carbon tax, green subsidies, green guarantees, and so forth. Also, macroprudential measures should complement, not substitute for, the required adjustments in microprudential measures to address financial institution-level risks caused by climate change (for more details on climate-related considerations in a microprudential framework, see chapter 7).

**Any macroprudential policy measures targeting climate-related risks should be designed carefully to achieve the intended financial stability objectives, but also to minimize unintended exclusionary effects** (figure 6.4). For example, prudential measures (if any) that aim to ultimately mitigate climate change transition or physical risks could ideally take into consideration how to avoid material constraints on the availability and affordability of transition and adaptation financing—that is, financing that helps firms and individuals invest in climate adaptation and transition to green operational models. This is discussed in more detail in chapter 9 on inclusive green finance.

**Applying prudential measures for managing climate-related financial risks will likely cause difficult trade-offs.** While no silver bullet has been discovered yet in the macroprudential policy area on how to effectively address climate-related financial stability risks without potential broader side effects, a promising approach is to apply measures on a firm or project level, which would help to distinguish transition financing from other types of lending.<sup>27</sup> This approach, however, has several important preconditions, such as the need for a green taxonomy and granular firm- or project-level data. While partly complex in operational terms, such highly targeted tools could allow more direct limitation of identified climate risks and do not necessarily weigh on banks' capital requirements.<sup>28</sup>

**Once a robust climate-related financial stability surveillance tool kit is operationalized, CBJ will closely monitor the emerging international good practices for climate-responsive macroprudential policies.** If certain climate-related financial risks are assessed to be material and systemically important for financial stability in Jordan, different options will be explored before action is taken. CBJ will analyze how and whether existing conventional macroprudential policy measures can be used to address climate-related risks. To ensure that these conventional measures can be applied to climate risks, complementary policies will be needed for the disclosure and reporting of climate-related financial data.<sup>29</sup>

**Any adjustments in capital or noncapital types of macroprudential measures must be based on clear evidence and impact assessment.** Risk evidence invariably requires collection and analysis of data that allow assessment of the profile of green assets and exposures in terms of their risk and return features. There is an ongoing big debate as to whether green assets are less risky ("risk differentials"). While the economic and financial rationale is clear on how and why green assets could be less risky and more sustainable in the longer term, all this should still be quantified into country-specific metrics such as probability of default and so on. First, this requires a robust definition for the universe of green assets; second, sufficiently long time series are needed to conduct an assessment that generates robust statistical estimates.

27 Coelho and Restoy, "Macroprudential Policies for Addressing Climate Related Financial Risks: Challenges and Trade-Offs."

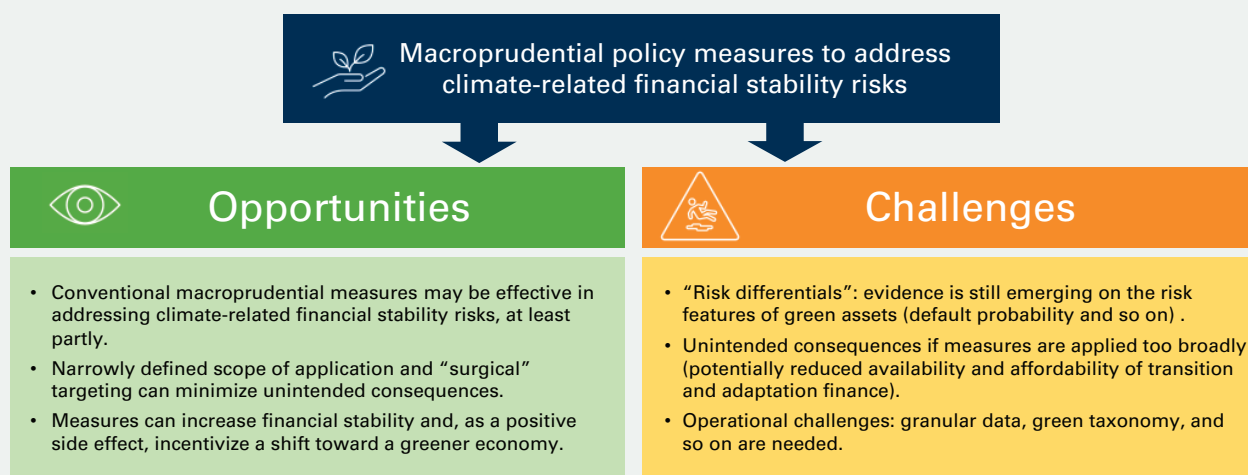
28 Baranović et al., "The Challenge of Capturing Climate Risks in the Banking Regulatory Framework."

29 Baranović et al., "The Challenge of Capturing Climate Risks in the Banking Regulatory Framework."



**Under the microprudential framework (see chapter 7), CBJ will encourage FIs to consider climate-related factors in assessing risks to capital** (for example, linked to credit risk under stressed conditions), which will also benefit the financial stability assessment. Thus financial stability considerations will be included in broader supervisory guidelines issued by CBJ to FIs to instruct them on how to assess (quantitatively and qualitatively) the potential impacts of climate-related financial risks on FIs’ balance sheets under different scenarios and how best to manage and mitigate these risks.

**Figure 6.4: Key opportunities and challenges with macroprudential measures to mitigate climate-related financial stability risks**



Source: Original figure for this strategy.

## 6.9 PHASE 6: COMMUNICATING

**CBJ will leverage the findings from the climate-related financial stability monitoring not only as a tool to raise awareness within the financial sector, but also to enhance market discipline.** CBJ will actively engage in disseminating new knowledge generated through climate-related financial stability surveillance work. Various channels will be used for this purpose: (a) a regular section in the financial stability report, thematic reports, or notes to inform financial-sector and other stakeholders on the results of the latest assessments of climate-related financial risks to the stability of selected sectors in the financial system and (b) workshops and discussions with financial sector participants to discuss CBJ’s metrics and models to assess financial stability resilience to climate-related risks and how these tools could be used by FIs.

**Table 6.2: Action plan**

Milestone/Actions	2023		2024		2025		2026		2027		2028	
	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>INTEGRATING CLIMATE CONSIDERATIONS INTO CBJ'S FINANCIAL STABILITY FRAMEWORK</b>												
<b>Build capacity and embrace state-of-the-art knowledge</b>												
1.	As part of the CBJ's broader capacity-building program on greening the financial sector, implement capacity-building measures focused specifically on addressing climate-related financial risks through a macroprudential framework.											
2.	Set up a coordination mechanism between different CBJ departments to analyze how climate-related financial risks and opportunities jointly affect financial stability, the real economy, and monetary policy and its transmission.											
<b>Leverage the first climate risk assessment for financial stability surveillance purposes</b>												
3.	Identify modules of the first climate risk assessment that will be integrated and operationalized into regular financial stability surveillance.											
4.	Set up a process for regular climate-related data collection and monitoring for financial stability purposes.											
<b>Scoping the climate-related financial stability surveillance tool kit</b>												
5.	Define the frequency of the climate-related financial stability assessment/monitoring cycle.											
6.	In the initial stage of the climate-related financial stability surveillance work, mirror the scope of the first climate risk assessment (physical and transition risks; same sectoral coverage: banks, insurance, MFIs; similar geographical granularity).											
7.	Once a National Green Taxonomy is adopted, align the classification system used in the climate-related financial stability surveillance with the taxonomy.											
8.	Gradually expand the scope of the climate-related financial stability surveillance to include a more detailed analysis of the households sector, of international exposures, and of other issues.											
<b>Develop and operationalize the climate-related financial stability surveillance tool kit</b>												
9.	Conduct a stock-take (globally and within CBJ's existing tool kit) and identify feasible metrics that could be operationalized for regular climate-related financial stability surveillance.											
10.	Adjust existing and develop and operationalize new metrics and indicators.											
11.	Operationalize selected modules from the first climate risk assessment and run them on a regular basis, including stress testing/sensitivity analysis.											
12.	Implement a systematic collection of data necessary for surveillance work.											
13.	Identify, quantify, and document material climate-related financial risks for Jordan's financial stability.											
<b>Explore entry points for macroprudential policy measures to mitigate material climate-related financial stability risks</b>												
14.	Monitor international good practices linked to design, application, and impact assessment of macroprudential policies to address climate-related financial risks.											
15.	Map the identified material climate-related financial stability risks to concrete macroprudential policy measures that could be used to mitigate those risks.											
16.	Prepare a macroprudential tool kit that can be activated if needed, to mitigate climate-related financial stability risks.											
17.	Integrate financial stability considerations into the CBJ's supervisory guidelines to financial institutions on the identification, assessment, monitoring, and mitigation of climate-related financial risks.											
<b>Communicate the findings</b>												
18.	Prepare a dedicated section in the Financial Stability Report presenting results of ongoing climate-related financial stability surveillance work.											
19.	Conduct workshops/roundtables with financial institutions to discuss results of the climate-related financial stability surveillance and to facilitate a transfer of CBJ's technical expertise to financial institutions.											
20.	Issue thematic reports and exploratory studies to share the results of CBJ's climate-related financial stability surveillance.											

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; FIs = financial institutions; MFIs = microfinance institutions.







# INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S MICROPRUDENTIAL FRAMEWORK







**Climate-related financial risks can affect the safety and soundness of individual FIs through both physical and transition risk drivers.**<sup>30</sup> Against the backdrop of growing physical and transition risks to FIs, there is a case for CBJ to integrate considerations of climate-related financial risk drivers into microprudential supervisory and regulatory frameworks. The primary objectives of this integration are (a) to assess the potential impact of these risks on the soundness and safety of supervised FIs and (b) to ensure that FIs have sufficient loss absorption capacity and are appropriately monitoring, managing, and mitigating material climate-related financial risks.










## 7.1 OVERVIEW OF INTERNATIONAL DEVELOPMENTS

**The Basel Committee on Banking Supervision (BCBS) reviewed the existing Basel Framework and concluded that overall, the Core Principles for Effective Banking Supervision and the supervisory review process are sufficiently broad to accommodate supervisory responses to address climate-related financial risks.**<sup>31</sup> However, given the need for additional guidance, as a follow-up to this review, BCBS issued 18 high-level principles: 12 principles for banks with guidance on effective management of climate-related financial risks and 6 principles for supervisors on effective supervision of climate-related risks in the banking sector (figure 7.1). This chapter offers an overview of CBJ’s framework for microprudential climate-related issues at a high level, without delving into the specific details of how each BCBS principle could be applied. BCBS principles are explored in greater depth in chapter 8. Box 7.1. provides a high-level overview of CBJ’s current microprudential supervisory arrangements.

30 Rodrigo Coelho and Fernando Restoy, “Macroprudential Policies for Addressing Climate Related Financial Risks: Challenges and Trade-Offs” (FSI Briefs 18, Financial Stability Institute, Bank for International Settlements, Basel, Switzerland, April 2023), <https://www.bis.org/fsi/fsibriefs18.pdf>.

31 The Basel Framework is the full set of standards of the BCBS, which is the primary global standard setter for the prudential regulation of banks.

**Figure 7.1: BCBS principles for effective management and supervision of climate-related financial risks (streamlined)**

<p><b>Corporate governance</b></p> 	<p><b>Principle 1.</b> Establish sound process for understanding/ assessing the potential impacts of climate-related risk drivers. Incorporate these risks into overall business strategies and risk management frameworks.</p>	<p><b>Principle 2.</b> Engage the board and senior management, assigning climate-related responsibilities throughout the organization; exercise effective oversight of climate-related financial risks.</p>	<p><b>Principle 3.</b> Adopt appropriate policies, procedures, and controls to ensure management of climate-related financial risks.</p>
<p><b>Internal control</b></p> 	<p><b>Principle 4.</b> Incorporate climate-related financial risks into internal control frameworks across the three lines of defense to ensure identification, measurement, and mitigation of material climate-related financial risks.</p>		
<p><b>Capital/liquidity adequacy</b></p> 	<p><b>Principle 5.</b> Identify and quantify climate-related financial risks and incorporate those assessed as material over relevant time horizons into internal capital and liquidity adequacy assessment processes, including stress-testing programs.</p>		
<p><b>Risk management process</b></p> 	<p><b>Principle 6.</b> Identify, monitor, and manage all climate-related financial risks that could materially impair financial condition, including capital resources and liquidity positions.</p>		
<p><b>Management monitoring and reporting</b></p> 	<p><b>Principle 7.</b> Ensure that risk data aggregation capabilities and internal risk reporting practices account for climate-related financial risks. Internal reporting systems should be capable of monitoring material climate-related financial risks and producing timely information to ensure effective board and senior management decision-making.</p>		
<p><b>Management of credit risk</b></p> 	<p><b>Principle 8.</b> Understand the impact of climate-related risk drivers on credit risk profiles and ensure that credit risk management systems and processes consider material climate-related financial risks.</p>		
<p><b>Comprehensive management of market, liquidity, operational, and other risks</b></p> 	<p><b>Principle 9.</b> Understand the impact of climate-related risk drivers on market risk positions and ensure that market risk management systems and processes consider material climate-related financial risks.</p>	<p><b>Principle 10.</b> Understand the impact of climate-related risk drivers on liquidity risk profiles and ensure that liquidity risk management systems and processes consider material climate-related financial risks.</p>	<p><b>Principle 11.</b> Understand the impact of climate-related risk drivers on operational (and other) risk and ensure that risk management systems and processes consider material climate-related risks.</p>
<p><b>Scenario analysis</b></p> 	<p><b>Principle 12.</b> Where appropriate, make use of scenario analysis to assess the resilience of business models and strategies to a range of plausible climate-related pathways and determine the impact of climate-related risk drivers on their overall risk profile.</p>		
<p><b>Prudential regulatory and supervisory requirements for banks</b></p> 	<p><b>Principle 13.</b> Have supervisors determine that banks' incorporation of material climate-related financial risks into their business strategies, corporate governance, and internal control frameworks is sound and comprehensive.</p>	<p><b>Principle 14.</b> Have supervisors determine that banks can adequately identify, monitor, and manage all material climate-related financial risks as part of their assessments of banks' risk appetite and risk management frameworks.</p>	<p><b>Principle 15.</b> Have supervisors determine the extent to which banks regularly identify and assess the impact of climate-related risk drivers on their risk profile and ensure that material climate-related financial risks are adequately considered in their management of credit, market, liquidity, operational, and other types of risk.</p>
<p><b>Responsibilities, powers, and functions of supervisors</b></p> 	<p><b>Principle 16.</b> In conducting supervisory assessments of banks' management of climate-related financial risks, have supervisors use an appropriate range of techniques and tools and adopt adequate follow-up measures in case of material misalignment with supervisory expectations.</p>	<p><b>Principle 17.</b> Have supervisors ensure that they have adequate resources and capacity to effectively assess banks' management of climate-related financial risks.</p>	<p><b>Principle 18.</b> Have supervisors consider using climate-related risk scenario analysis to identify relevant risk factors, to size portfolio exposures, to identify data gaps, and to inform the adequacy of risk management approaches, and they may also consider the use of climate-related stress testing.</p>

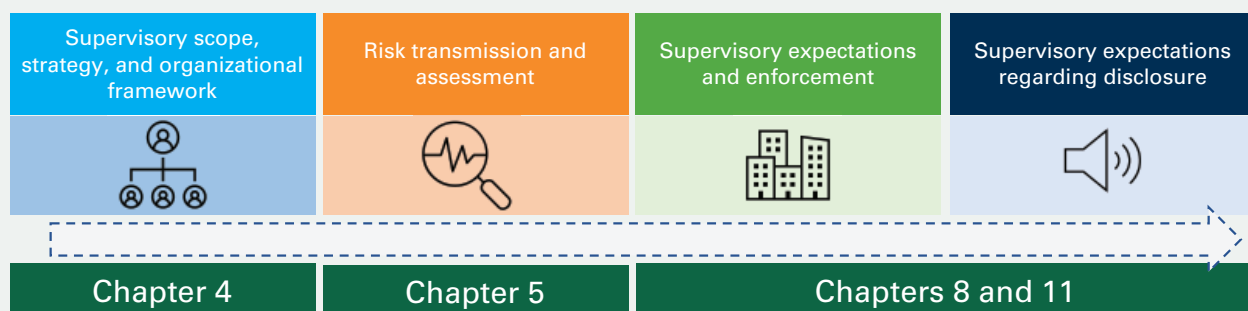
Source: Reproduced and adapted from the Basel Committee on Banking Supervision (BCBS).



**Although the primary target of the BCBS principles is the banking sector, given that these are high-level principles, they could also be applied—to some extent and following the proportionality approach—to other market segments in Jordan, mostly MFIs.** For example, MFIs could benefit from BCBS principles linked to setting up internal governance and control systems; the principles could also be useful for the risk management framework on identifying and managing climate-related financial risks. For the insurance sector, the International Association of Insurance Supervisors (IAIS) has reviewed the existing supervisory framework and concluded that the current Insurance Core Principles (ICPs) are sufficiently broad to cover climate risks. However, in March 2023 the IAIS launched a public consultation on limited changes to guidance related to various ICPs and intends to develop supporting material to make it even more explicit that insurance supervisors should require insurers to incorporate climate-related financial risks into their governance, enterprise risk management, disclosures, and so forth.<sup>32</sup> According to the BIS’s survey (2020) encompassing 27 BIS members, approximately two-fifths of BIS members have issued, or are in the process of issuing, principles-based guidance regarding climate-related financial risks. However, the majority of members have not factored, or have not yet considered factoring, the mitigation of such risks into the prudential capital framework.<sup>33</sup> BCBS Core Principles for Effective Banking Supervision are currently under review and will likely incorporate climate risk under several essential criteria.

**The BCBS principles and ongoing work by IAIS, NGFS, and other international bodies all contribute to an evolving supervisory response on integrating considerations of climate-related financial risks into microprudential frameworks.** NGFS has highlighted four main areas in the financial supervisors’ journey for integrating climate-related and environmental financial risks into prudential supervision frameworks: (a) supervisory scope, strategy, and organizational framework; (b) risk transmission and assessment; (c) development and implementation of supervisory expectations and their enforcement; and (d) supervisory expectations with regard to disclosures (figure 7.2). The risk transmission and assessment will be addressed largely by the upcoming CBJ climate risk assessment (chapter 5). CBJ’s capacity-building and governance considerations are discussed in chapter 4. This chapter focuses mostly on how CBJ will integrate considerations of climate-related financial risks into a microprudential supervisory framework, which complements chapter 6 on greening the financial stability area. This chapter also touches upon the main entry points for climate-related supervisory guidance, which is elaborated on in chapter 8.

**Figure 7.2: NGFS’s milestones in integrating climate-related and environmental financial risks into prudential supervision**



Source: Adapted from Network for Greening Financial Systems.

32 IAIS (International Association of Insurance Supervisors), “Public Consultation on Climate Risk Supervisory Guidance—Part One (Consultation Guidance, IAIS, Basel, Switzerland, March 2023), <https://www.iaisweb.org/uploads/2023/03/climate-risk-supervisory-guidance-part-one.pdf>.

33 Basel Committee on Banking Supervision, “Climate-Related Financial Risks: A Survey on Current Initiatives” (Bank for International Settlements, Basel, Switzerland, April 2020), <https://www.bis.org/bcbps/publ/d502.pdf>.

## Box 7.1: Current microprudential supervisory arrangements at CBJ

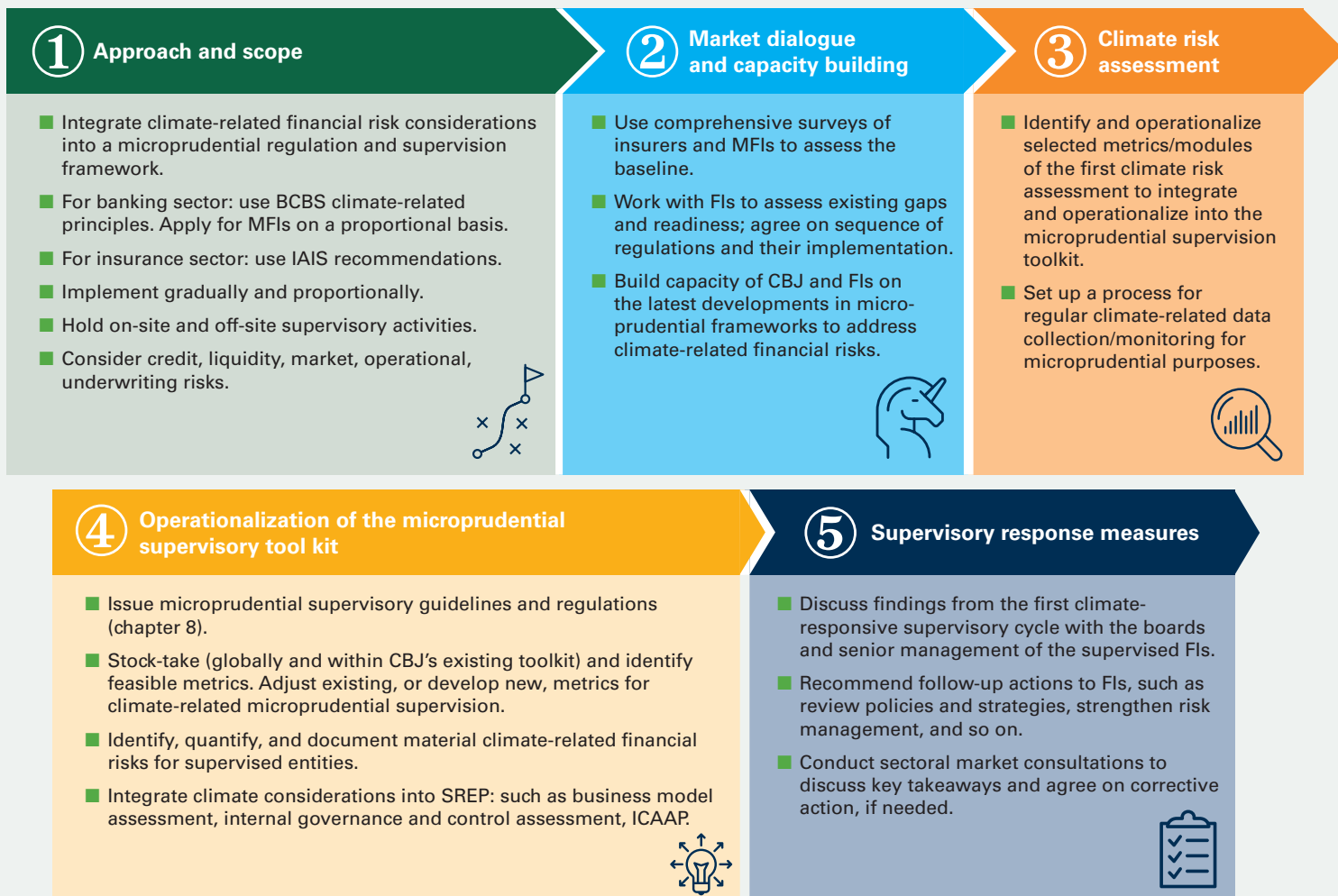
**Microprudential supervision and regulation at the Central Bank of Jordan (CBJ) are conducted by the Bank Supervision Department, the Finance Companies and Credit Bureaus Supervision Department, and the Insurance Supervision Department.** CBJ monitors and supervises the banking and insurance sectors through on-site and off-site activities, and banks are scored according to the results of on-site supervision following the CAMELS (capital adequacy, asset quality, management, earnings, liquidity, and sensitivity) for local banks or ROCA (risk management, operational controls, compliance, asset quality) for foreign banks classification system and the CARAMELS (capital adequacy, asset quality, reinsurance liability, adequacy of claims and actuarial, management soundness, earnings, liquidity, sensitivity) system for insurance companies. CBJ follows Basel II standards with the full-fledged Supervisory Review and Evaluation Process (SREP) in place. Banks' internal capital adequacy assessment process (ICAAP) calculations are reviewed periodically (usually on annual basis).

**The microfinance sector became part of the formal financial system in 2018.** The Finance Companies and Credit Bureaus Supervision Department has developed off-site and on-site supervision tools to oversee MFIs' operations and ensure the stability of the microfinance sector, including a CAMEL rating system. Also, according to a new financing companies' bylaw, CBJ expanded its supervisory umbrella to include other financing institutions such as mortgage financing companies and factoring companies.

**Regulatory and supervisory responsibilities of the insurance sector were moved from the Ministry of Industry, Trade and Supply under CBJ in 2021.** Related to that change, CBJ has been working on strengthening the regulatory and supervisory regime for the insurance sector, aligning it with international standards. The Insurance Supervision Department is working on improving the early warning system (EWS) on the basis of quantitative and qualitative indicators. The EWS helps identify insurance companies that need more supervisory attention and enables CBJ to determine which companies need an on-site inspection. The Insurance Supervision Department is also aiming to adopt a risk-based capital approach. This will allow CBJ to better assess the insurers' capital strength with different business models and portfolios. Such an approach will also facilitate the integration of climate-related risk considerations into broader insurance sector supervisory assessments.

**Figure 7.3 presents a high-level sequencing for the integration of climate-related and environmental financial risks into CBJ's microprudential framework,** which will be interconnected with the activities described in other chapters of this strategy. For example, the first climate risk assessment will help operationalize microprudential surveillance metrics and quantify the impacts of climate-related financial risks on individual FIs.

**Figure 7.3: CBJ’s gradual approach toward integrating considerations of climate-related and environmental financial risks into a microprudential framework**



Source: Original figure for this strategy.

Note: BCBS = Basel Committee on Banking Supervision; CBJ = Central Bank of Jordan; FIs = financial institutions; IAIS = International Association of Insurance Supervisors; ICAAP = International Capital Adequacy Assessment Process; MFIs = microfinancial institutions; SREP = Supervisory Review and Evaluation Process.

**As discussed in chapter 6, climate-responsive prudential measures that intend to enhance financial stability and soundness of individual FIs may ultimately undermine stability if the availability and affordability of transition and adaptation financing is significantly reduced.** This can happen if some FIs decide to manage climate-related financial risks by reducing lending—transition or adaptation financing—to borrowers that are more vulnerable to climate-related risks but are willing to invest in low-carbon transition and climate adaptation measures to move toward a more resilient state. To prevent this problem, CBJ will design prudential measures carefully with a broader cost-and-benefit framework in place. On a related note, chapter 9 discusses in more detail the framework for inclusive green finance.

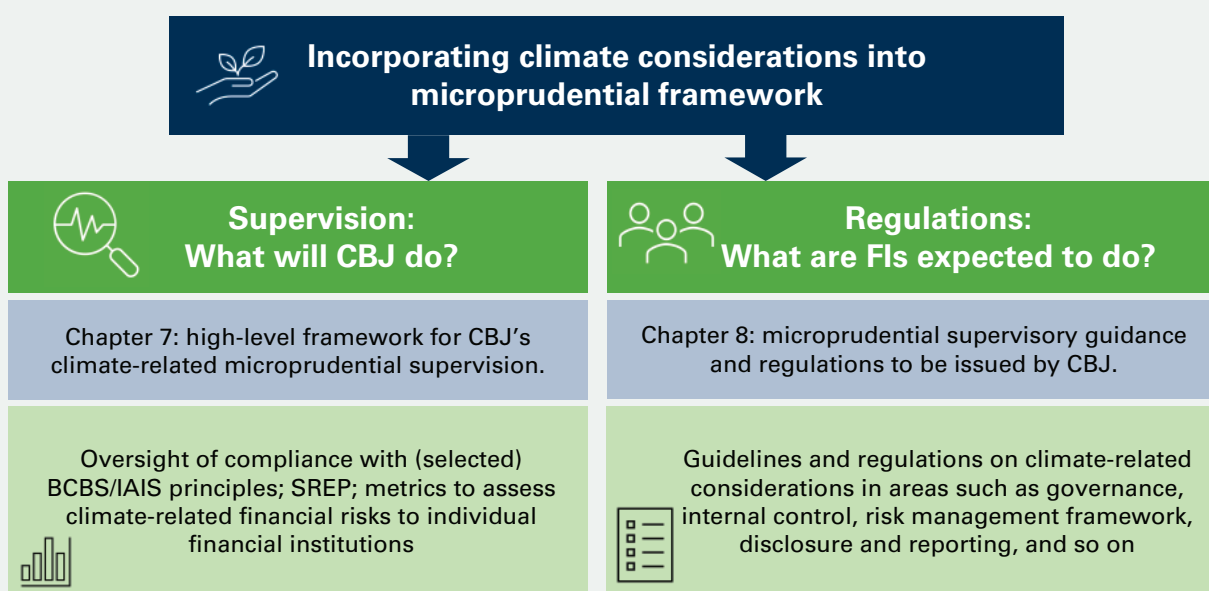


## 7.2 INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S MICROPRUDENTIAL FRAMEWORK

### High-level approach

**Requirements for FIs to integrate climate-related financial risk considerations into their operating frameworks will follow international standards.** For the banking sector and, to a much lesser extent, MFIs, BCBS Principles for the Effective Management and Supervision of Climate-Related Financial Risks will be used. For the insurance sector, CBJ will follow the IAIS's recommendations on the supervision of climate-related risks in the insurance sector.<sup>34</sup> FIs are strongly encouraged to familiarize themselves with the BCBS principles and IAIS recommendations in detail, which will be circulated to each FI as part of the CBJ's supervisory guidelines (figure 7.4).

**Figure 7.4. Two focus areas of climate-related considerations in CBJ's microprudential framework**



Source: Original figure for this strategy.

Note: BCBS = Basel Committee on Banking Supervision; CBJ = Central Bank of Jordan; FIs = financial institutions; IAIS = International Association of Insurance Supervisors; SREP = supervisory review and evaluation process.

<sup>34</sup> IAIS (International Association of Insurance Supervisors). May 2021. "Application Paper on the Supervision of Climate-Related Risks in the Insurance Sector." <https://www.iaisweb.org/uploads/2022/01/210525-Application-Paper-on-the-Supervision-of-Climat-related-Risks-in-the-Insurance-Sector.pdf>.

## Scope

The following are key dimensions under the scope of CBJ's microprudential framework for climate-related financial risks:

- **Risk and exposure categories.** The microprudential framework will cover both physical and transition risk drivers. When it comes to climate-induced financial risks, initially the focus will be on credit risks, gradually expanding to include market, liquidity, and operational risks. In addition, for the insurance sector, underwriting and investment risks will be considered.
- **Types of FIs.** Following the proportionality principle, in the initial phases the framework will be applied to the banking sector (banks supervised and regulated by CBJ), with a gradual expansion to include MFIs and insurance companies (a concrete timeline is subject to further dialogue with the financial sector participants).
- **Supervisory and regulatory activities.** The microprudential framework for climate-related financial risks will be implemented through both on-site and off-site supervisory activities. CBJ will issue supervisory guidance on integrating considerations of climate-related financial risks into governance systems, risk management frameworks, and more (see chapter 8) and will incorporate climate-related considerations into the supervisory review process.
- **Time horizon.** The supervision cycle will combine a conventional time horizon for short-term (1–3 years) risk assessment of acute hazards with longer time horizons (5–10 years) to better capture the specificities of the climate-related risk drivers. Even longer time horizons (up to 30 years) can be used for some supervisory actions that are part of the supervision cycle, such as climate stress testing for transition risk.

## 7.3 MARKET DIALOGUE AND CAPACITY BUILDING

**CBJ will conduct market dialogue with financial sector participants to discuss and agree on a gradual approach and timeline for implementing BCBS principles and IAIS recommendations.** One of the objectives of market consultations will be to assess the level of readiness among various FIs. This will help CBJ better understand how far various FIs are from integrating BCBS principles and IAIS recommendations into their operating models, what the key gaps are and how best to address them, what sequencing is needed, and so forth. This baseline assessment will complement the results of the survey that CBJ conducted with banks in 2021 (see chapter 3). CBJ will also conduct similar comprehensive surveys for the insurance and MFI sectors. These consultations and surveys will inform the design of CBJ's supervisory guidelines and regulations on the implementation of the micro- and macroprudential frameworks for climate-related financial risks.

**Ensuring adequate resources and capacity for the implementation of a microprudential framework to address climate-related financial risks will be equally important to FIs and CBJ.** For example, BCBS principle 17 refers to the need for financial supervisors to ensure adequate resources and capacity to effectively assess banks' management of climate-related financial risks. Development of the respective expertise will be an integral part of CBJ's broader capacity-building program (chapter 4). CBJ, in turn, will strengthen its internal processes, capacity, and policies to

be able to support the financial sector in embracing the climate-related microprudential framework and to conduct effective oversight of financial sector compliance with the framework and new regulatory requirements. For example, as part of the framework's implementation, CBJ's sectoral supervision teams will assess how FIs incorporate material climate-related financial risks into their business strategies, corporate governance, and internal control frameworks and how they reflect the level of climate-related risk factors in the broader risk management frameworks.

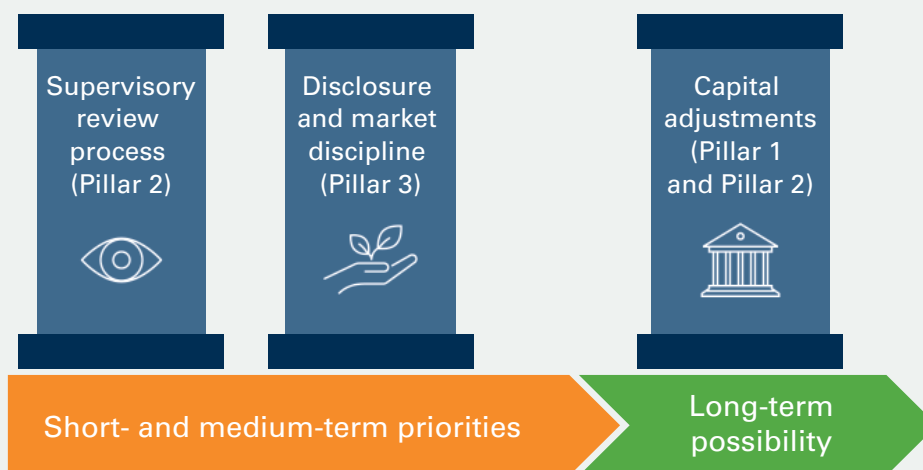
## 7.4 OPERATIONALIZING A MICROPRUDENTIAL SUPERVISORY AND POLICY TOOL KIT

### Banking sector

#### INTEGRATING CLIMATE-RELATED CONSIDERATIONS INTO SREP

The microprudential framework to address climate-related financial risks in Jordan's banking sector will focus on pillar 2 (supervisory review) and 3 (market discipline and disclosure) requirements, following a proportionality principle (figure 7.5). SREP will be used as the core umbrella tool for greening microprudential supervision; however, before integrating climate-related risk considerations into the supervisory review process, CBJ will issue supervisory guidance on what is expected from FIs (chapter 8).

**Figure 7.5: CBJ's climate-related focus areas and sequencing for the microprudential framework**



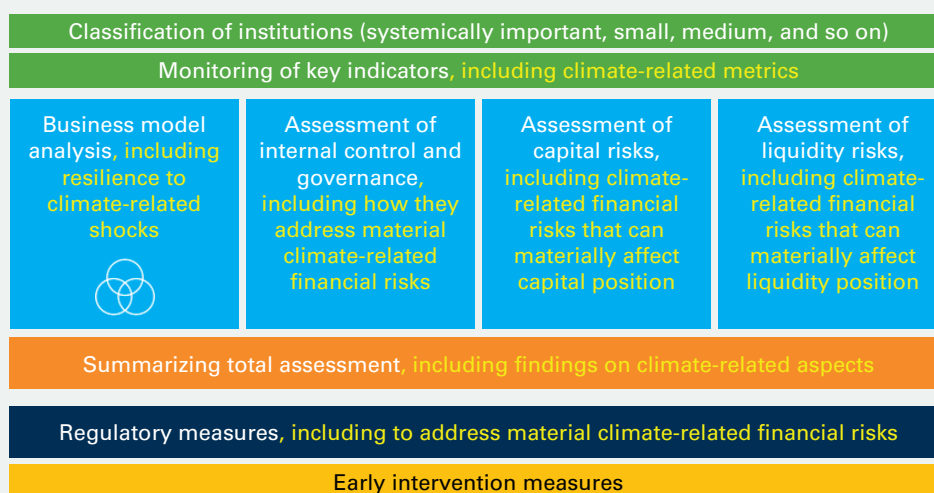
Source: Original figure for this strategy.



**Different supervisory activities, which serve as inputs to SREP, can be greened on a stand-alone basis.**<sup>35</sup>

CBJ's supervisory teams will revise the existing set of metrics that is used for off-site supervision and monitoring to integrate, where possible, considerations of climate-related financial risks. If these indicators signal that climate-related risk drivers can have material impact on the financial safety and soundness of a particular FI, this can be further considered during on-site inspection and would also be flagged as part of SREP findings. Figure 7.6 presents the SREP framework, indicating high-level entry points for incorporating climate-related considerations. Similar to the process in other countries, the SREP at CBJ focuses on the following four milestones: business model analysis, assessment of internal governance and controls, assessment of risks to capital, and assessment of risks to liquidity and funding. Financial regulators and standard-setting bodies are involved in a global debate over whether conventional SREPs, which should capture all the material risks to individual FIs, are already covering any climate-related financial risks that are material. The issue, however, is that climate-related risks have not been among the "traditional" types of risks considered by many FIs or financial regulators, and additional guidance may be needed.

**Figure 7.6: SREP and climate-related entry points**



Source: Adapted from European Banking Authority

## Climate-related considerations under ICAAP

**ICAAP is one of the critical building blocks of SREP that could be used for integration of climate-related considerations.** BCBS principle 5 refers directly to climate considerations for banks' ICAAP: "Banks should identify and quantify climate-related financial risks and incorporate those assessed as material over relevant time horizons into their internal capital and liquidity adequacy assessment processes, including their stress testing programs where appropriate."<sup>36</sup> CBJ's supervisory guidance and regulations (chapter 8) will require gradual integration of climate-related considerations into ICAAP.

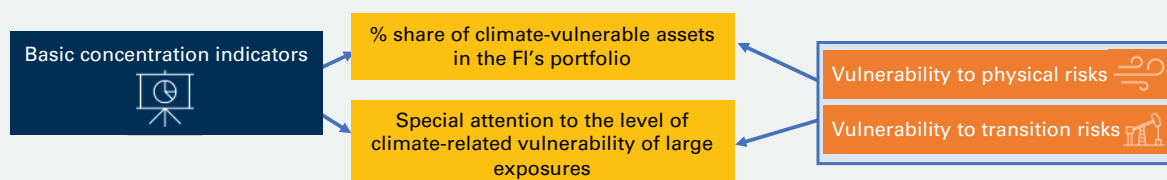
35 SREP is an ongoing supervisory process bringing together findings from all supervisory activities into a comprehensive overview of an institution.

36 BCBS (Basel Committee for Banking Supervision). 15 June 2022. "Principles for the effective management and supervision of climate-related financial risks." <https://www.bis.org/bcbs/publ/d532.htm>

## Indicative metrics for off-site microprudential supervisory monitoring

To the extent possible, the microprudential metrics for assessing and monitoring the climate-related financial risks for individual FIs will mirror those used in the first climate risk assessment and will also align with metrics used in the financial stability area. For example, for the physical risk assessment, it will be important to monitor each FI for its concentration of credit or asset exposures to borrowers and counterparties or sectors in locations vulnerable to climate change. Likewise, concentration of transition risks in the FIs' portfolios will also be monitored. Linked to that, reporting on large exposures will have to be amended with climate-related information. Depending on the level of exposure, CBJ may require FIs to explore data on counterparties' own emissions (figure 7.7).

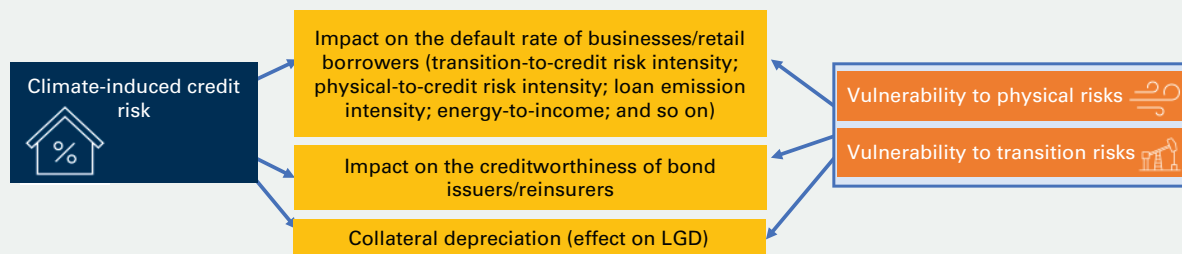
**Figure 7.7: Basic indicators for concentration risk**



Source: Original figure for this strategy.  
Note: FI = financial institution.

**Understanding concentration risk is a relatively simple step, and it should be complemented with assessment of how FIs' climate-related exposures in the balance sheet can translate into increased credit risk.** Conventional concentration risks are captured under Basel pillar II. CBJ's supervisory teams already monitor bank-level nonperforming loan ratios, provisions, and related indicators. Regressing historical nonperforming loans in Jordan with sectoral climate vulnerabilities, as well as forward-looking considerations on sectoral credit risk vulnerabilities to climate effects, can generate useful information for microprudential oversight. The indicative list of metrics for credit risk is provided in chapter 6 (see also figure 7.8), and includes transition-to-credit risk intensity, physical-to-credit risk intensity, loan carbon intensity, energy-to-income ratio, and so on. BCBS principle 8 encourages banks to understand the impact of climate-related risk drivers on their credit risk profile and to ensure that credit risk management systems and processes consider material climate-related financial risks.

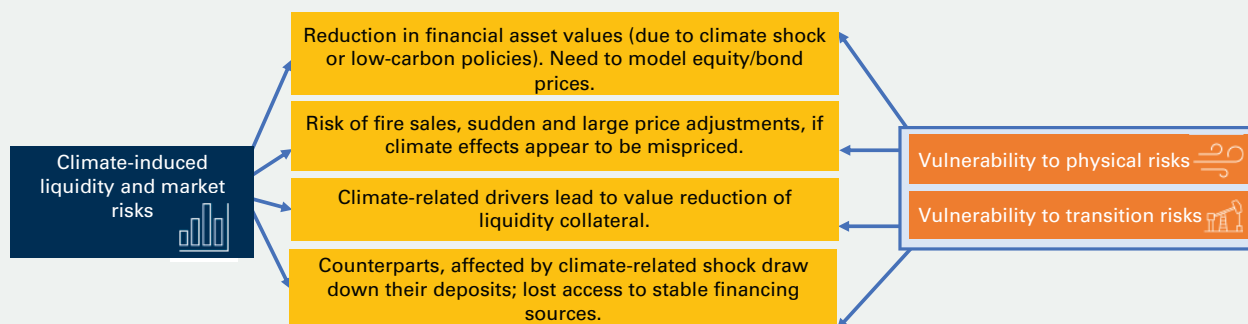
**Figure 7.8: Examples of indicators for credit risk**



Source: Original figure for this strategy.  
Note: LGD = loss given default.

**CBJ will also review existing metrics (and develop new ones where needed) to capture market, liquidity, and operational risks induced by climate-related risk drivers.** BCBS principles encourage banks to consider how climate-related exposures could affect their liquidity and market risk positions. For example, when it comes to liquidity risks, BCBS principle 10 indicates that banks should assess the impacts of climate-related financial risks on net cash outflows (such as increased drawdowns of credit lines or accelerated deposit withdrawals after a climate shock) or the value of assets comprising their liquidity buffers (figure 7.9). Where material and appropriate, banks should incorporate these impacts into their calibration of liquidity buffers and into their liquidity risk management frameworks. However, when it comes to adjusting conventional liquidity metrics, such as liquidity coverage ratio or net stable funding ratio, further work is needed to analyze how and whether the climate-related factors could be integrated. When it comes to monitoring, liquidity stress testing with certain climate-related shocks could be considered.

**Figure 7.9: Monitoring climate-related risk drivers for market and liquidity risks**



Source: Original figure for this strategy.

## Climate-related considerations as part of FIs' business model assessment under SREP

**One of the main SREP elements is the analysis of FIs' business model.** This analysis typically looks at the viability of the FI's current business model and the economic sustainability of potential evolution of the business model anchored in FI's strategy for the next three to five years. An appropriate time horizon to capture material climate change effects can vary significantly, depending on the business model and portfolio of each FI. The initial time horizon for CBJ's assessment will continue focusing on three to five years; however, in each case, CBJ will explore whether expanding this beyond five years encloses material harmful effects on the FI's balance sheet from climate change risk drivers. BCBS principles highlight the importance of understanding and evaluating how climate-related risks could impact the resilience of a bank's business model over the short, medium, and long terms and of considering how these drivers may affect the bank's ability to achieve its business objectives. Stress testing and scenario analysis can be useful tools in assessing FIs' business model resilience to potential climate effects, and, as part of SREP, CBJ will check how FIs' existing models capture climate-related risk drivers.



## Climate-related considerations in FIs' internal governance and controls assessment under SREP

**Appropriate governance arrangements, processes, and internal control mechanisms are critical factors for enabling effective integration of climate-related financial risk considerations into the broader institutional framework of FIs.** The first three BCBS principles are focused on implementing an appropriate corporate governance framework. For example, principle 1 encourages banks to take material physical and transition risks into consideration when developing and implementing business strategies. Principle 2 refers to the need for the board and senior management to clearly assign and cascade climate-related responsibilities across the organization and to conduct the respective oversight. Principle 3 stresses the importance of adopting appropriate policies, procedures, and controls to ensure effective management of climate-related financial risks across the organization. BCBS principle 4 is entirely dedicated to integrating climate-related financial risks into banks' internal control frameworks across the three lines of defense. CBJ, by issuing supervisory guidance (see chapter 8), will encourage FIs in Jordan to appropriately set up their internal processes, governance, and control mechanisms.

### Note on the microfinance sector

**In the microfinance sector, CBJ's climate-related microprudential framework will first focus on encouraging MFIs to build capacity, to set up governance arrangements, and then to prepare to gradually expand the integration of climate-related financial risk and opportunity considerations.** Once capacity is in place, some of the high-level BCBS principles applied to banks could also be used (to a lesser extent) in the MFI sector. The main differences will be in sequencing and level of sophistication. Given that the MFI sector in Jordan is still relatively small compared to the banking sector and considering that some MFIs have fewer financial and human resources to develop robust climate-responsive frameworks, more time will be given to this sector to adopt new climate-related microprudential principles. Embracing climate-related risk considerations will be important for MFIs, because their clients (micro and small enterprises, lower-income households) can be even more vulnerable to climate change shocks than banks' borrowers.

**Part of CBJ's broader market dialogue discussed in previous sections will focus specifically on MFIs to talk over and agree on the following items:** (a) a detailed review of the first climate risk assessment for Jordan's financial sector, with a focus on findings for MFIs; (b) addressing data gaps identified during climate risk assessment, development of the standard data templates, and collection, reporting, and analysis of primary data that support assessment of climate-related risk drivers (physical and transition) and channels of transmission to MFIs' portfolios; (c) development of the microprudential tool kit for the MFI sector, including the scope of application of BCBS principles (governance, internal control, capacity, risk management, and so forth), and a timeline for its gradual implementation; and (d) definition of the scope of on-site and off-site supervision cycles and guidance to the MFIs to comply with climate-related regulations. The discussion will also include an overview of the results of the upcoming survey for MFIs to assess their market readiness.

## Note on the insurance sector

**As for the banking sector and MFIs, the pilot climate risk assessment will provide foundational insights on the materiality of climate-related risks to Jordan’s insurance sector.** In general, there are many potential risk transmission channels that can be relevant to Jordan’s insurance sector (table 7.1). In addition to the management of climate-related financial risks, market development efforts will be equally important in Jordan to enhance the offering and uptake of green insurance products, which is discussed in more detail in chapter 11.

**Table 7.1: Climate-induced risks for the insurance sector**

Risk type	Potential impact
<b>Underwriting</b>	Climate change increases the frequency, severity, and concentration of weather-related insurance claims, as well as the level of variability. If the impact of climate change is not properly accounted for, underwriters may underestimate the risks to which an insurer is exposed in writing a particular insurance policy. Additionally, liability policies may also give rise to prudential impacts through underwriting risk.
<b>Investment</b>	The value of an insurer’s investment portfolio may be affected if invested in sectors or assets that may be at risk from either physical or transition-related factors.
<b>Liquidity</b>	A lack of reliable and comparable information on climate-sensitive exposures could create uncertainty and cause procyclical market dynamics, including fire sales of carbon-intensive assets, and hence reduce the liquidity of these markets. In addition, the uncertainty in future experience that may result from climate change could lead to a volatile claims experience. This in turn may lead to inadequate liquid resources and the potential need to dispose of assets on unfavorable terms.
<b>Operational</b>	Physical climate impacts may affect the insurer’s own assets (including property, equipment, information technology systems, and human resources), leading to increased operating costs, inhibited claims management capacity, or potential stoppages of operations. It may also affect outsourced activities.
<b>Reputational</b>	Negative publicity may be triggered by insurers underwriting or investing in sectors perceived as significantly contributing to climate change. This is exemplified by social movements calling for divestment from fossil fuels and the cessation of underwriting of coal-fired power infrastructure. Furthermore, reductions in affordability or availability of insurance coverage as insurers respond to climate risk may also lead to negative reputational impact—for instance, if insurers are perceived to increase prices substantially or withdraw coverage to certain counterparties without there being an appropriate alternative.
<b>Strategic</b>	Physical or transition-related climate events, trends, and uncertainty about future scenarios may present strategic challenges to insurers, which could inhibit or prevent an insurer from achieving its strategic objectives.

Source: International Association of Insurance Supervisors.

**CBJ will use the ICPs to establish minimum requirements for integration of climate-related financial risk considerations into insurers’ institutional and operational frameworks.** The proportional approach will be applied. Table 7.2 shows several examples of how each ICP could be associated with climate-related considerations, setting the foundation for supervisory process and oversight.

**Table 7.2: Selected ICPs and their links to climate-related factors**

Risk type	Potential impact
<b>7—Corporate governance</b>	The need to provide an entry point to mainstream climate-related considerations into a broader governance framework—for example, setting up oversight and management responsibilities, reflecting climate aspects in business strategies and objectives, and so on.
<b>8—Risk management and internal controls</b>	Given the potential impact of climate-related financial risks on an insurer’s solvency position, insurers are expected to consider such impacts within the existing categories of risks and, where appropriate, to update the existing risk management system.
<b>9—Supervisory reviewing and reporting</b>	The need to provide a natural starting point for integrating climate-related risks into the supervisory framework and supervisory plans and obtain the necessary qualitative and quantitative information on climate-related risks and methods for supervisory feedback and follow-up.
<b>14—Valuation</b>	The need to address liquidity issues due to acute physical risk events and, mainly, potential assets stranded owing to transition risks in an expected term horizon.
<b>15—Investments</b>	Physical and especially transition risks can have complex and nonlinear impacts on insurers’ investments. Where material, these risks must be taken into account regardless of whether the insurer invests directly or through a third-party asset manager or investment adviser.
<b>16—Enterprise risk management and solvency</b>	In the medium and longer terms, once insurance sector maturity increases, climate-related risks should be integrated into an insurer’s underwriting policy and underwriting processes, as well as in the ORSA process and areas relating to the insurer’s ALM and investment policies.
<b>17—Capital requirements</b>	This ICP relates to capital adequacy requirements for solvency purposes so that insurers can absorb significant unforeseen losses and provide for degrees of supervisory intervention. This is significantly relevant for climate-related risk drivers’ impacts on assets and liabilities.
<b>19—Conduct of business</b>	This ICP is especially relevant in terms of possible reputational risk and the risk of greenwashing.
<b>20—Disclosure</b>	This reflects the need for insurers to disclose relevant and comprehensive climate-related information on a timely basis in order to give policyholders and market participants a clear view of their business activities, risks, performance, and financial position. Also, material climate-related factors should be integrated as part of a broader disclosure framework.

Source: World Bank, Central Bank of Jordan, and IAIS.

Note: ALM = asset and liability management; ICP = Insurance Core Principle; ORSA = own risk and solvency assessment.

**As for the banking sector and MFIs, CBJ will launch a targeted dialogue with insurance sector participants and will also conduct a comprehensive survey to better understand their market readiness and existing gaps.** CBJ will aim to integrate climate-related considerations into the CARAMELS methodology.<sup>37</sup> Overall, the climate-related international standards and good practices in the insurance sector are relatively less developed than in the banking sector, and this will have direct implications for the sequencing and timeline for developing and implementing a climate-related microprudential framework for the insurance sector in Jordan.

<sup>37</sup> CARAMELS methodology involves capital adequacy, asset quality, reinsurance ability, adequacy of claims and actuarial, management soundness, earnings and profitability, liquidity, and sensitivity to market risks.



## 7.5 POTENTIAL MICROPRUDENTIAL SUPERVISORY RESPONSE MEASURES

**Climate-related findings from the overall supervisory review and evaluation can lead to material supervisory measures applied to the assessed FIs.** However, in the case of capital requirements, CBJ does not anticipate any adjustments or additional requirements driven by climate-related supervisory assessments any time soon (box 7.2).

### Box 7.2: Climate-related considerations for pillar 1 capital requirements

The NGFS Progress Report on the Guide for Supervisors indicates that the community of supervisors has been exploring ways to mitigate the impact of climate-related and environmental risks and to increase the resilience of individual financial institutions, including via the potential adjustment of pillar 1 capital requirements, following a risk-based approach. Challenges in the advancement of pillar 1 treatment remain because of interconnecting issues such as the early stage of development of methodologies to assess climate-related and environmental risks, with their long time horizon, nonlinear nature, and lack of reliable data. The setting of pillar 1 capital requirements is also hampered by a lack of common definitions, classifications, and taxonomies and evidence of risk differentials between “green” and “nongreen” assets. Risk-based capital requirements are calculated as a percentage of risk-weighted assets, and more analysis is needed to better understand the risk differentials in Jordan’s financial sector—for instance, how the level of risk differs among various financial exposures when the climate dimension is added into consideration. Although existing challenges do not exclude use of pillar 1 tools, there may be greater potential for pillar 2 measures for addressing material idiosyncratic climate-related and environmental risks faced by individual FIs.<sup>a</sup>

a. NGFS (Network for Greening the Financial System), “Capturing Risk Differentials from Climate-Related Risks” (Technical document, May 2022).

**CBJ could apply noncapital supervisory measures if SREP identifies a noncompliance with CBJ’s climate-related microprudential framework.** The list of potential supervisory response measures will be discussed in the supervisory guidelines to be issued by CBJ. On the basis of findings from the supervisory review process, CBJ may require FIs to do the following, for example:

- *Review their strategies and policies to ensure appropriate management and mitigation of material climate-related financial risks.* Given the distinctive characteristics of climate-related risks, certain institutional policies and processes may need to be updated. Even if the strategy is not to be changed, risk management and controls may need to be revised according to the bank’s risk appetite for climate-related risks.
- *Strengthen risk management.* On the basis of experience gained through the supervisory dialogue, CBJ may deem it necessary to require institutions to improve their risk management frameworks to appropriately reflect and manage climate-related financial risks. In addition, if the supervisory process reveals that exposures to climate-related financial risks are excessively high and pose a material threat to an FI’s soundness and safety, CBJ could require such risks to be reduced through certain mitigation measures.
- *Strengthen their internal control systems.* CBJ may deem it necessary to require institutions to improve their corporate governance, IT systems, internal control systems, procedures, and processes to better address climate-related financial risks.

**After the first cycle of the climate-related supervisory process is concluded, CBJ will adopt a consultative approach with each supervised entity to review key findings, recommendations, and the scope of the subsequent supervisory cycle.** This approach will involve discussions with the boards of FIs and require adequate follow-up on the shortcomings identified. To ensure that FIs have a clear understanding of what is expected of them, CBJ will issue supervisory guidance before integrating climate-related risk considerations into the supervisory review process. This guidance will establish clear standards for FIs to follow. CBJ will also aim to issue a public guidance note presenting key findings and sector-level recommendations based on the first climate-responsive supervisory review processes (banks, MFIs, and insurance).

**Table 7.3: Action plan**

Milestone/Actions	2023		2024		2025		2026		2027		2028	
	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>INTEGRATING CLIMATE CONSIDERATIONS INTO CBJ'S MICROPRUDENTIAL FRAMEWORK</b>												
1. Set up a coordination mechanism between CBJ's teams to analyze intersections between climate-related financial risk effects on microprudential supervision, macroprudential supervision, and the real economy as well as to exchange technical tools and information.												
<b>Implement market dialogue and capacity building</b>												
2. As part of the CBJ's broader capacity-building program on greening the financial sector, implement internal capacity-building measures for supervisory teams (banking, MFIs, insurance) focused specifically on addressing climate-related financial risks through the microprudential framework.												
3. Conduct comprehensive surveys of insurers and MFIs to assess the baseline when it comes to climate-related financial risk management and green finance.												
4. Conduct a follow-up market dialogue (bilateral interviews and sectoral consultations) with FIs to assess existing gaps and readiness and to agree on sequencing of regulations and their implementation.												
<b>Leverage findings from the first climate risk assessment for microprudential supervision and regulation purposes</b>												
5. Identify and operationalize appropriate metrics/modules of the first climate risk assessment (and beyond) to be integrated into the microprudential surveillance tool kit.												
6. Set up and implement a process for regular climate-related data collection for microprudential purposes.												
<b>Operationalize the microprudential supervisory tool kit</b>												
7. Identify, quantify, and document material climate-related financial risks for supervised entities.												
8. Formally integrate climate-related factors into CBJ's SREP framework: business model assessment; internal governance and controls' assessment; ICAAP.												
9. Formally integrate climate-related factors into CBJ's supervisory review process for insurance and MFIs.												
10. Issue microprudential regulations (Chapter 8): starting with the banking sector; followed by insurance and MFIs.												
11. Conduct an annual cycle of climate-related supervisory review (first for banks; followed by MFIs and insurance sector).												
<b>Take supervisory response measures</b>												
12. Conduct discussions with boards and senior management of FIs, to communicate findings of the climate-responsive supervisory review process.												
13. Issue recommendations to each supervised FI based on the supervisory review process.												
14. Issue a public guidance note presenting key findings and sector-level recommendations based on the first climate-responsive supervisory review processes (banks, MFIs, and insurance).												

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; FIs = financial institutions; ICAAP = Internal Capital Adequacy Assessment Process; MFIs = microfinance institutions; SREP = Supervisory Review and Evaluation Process.







# CLIMATE-RELATED SUPERVISORY GUIDANCE





## INTRODUCTION

**CBJ’s supervisory guidance will play a crucial role in ensuring consistency and coordination of climate-related practices in Jordan’s financial sector.** This guidance and regulations will provide a framework for FIs to identify, assess, monitor, and address climate-related and environmental financial risks and to contribute to green finance mobilization. Climate-related supervisory guidance and regulations will span several areas, including governance arrangements, risk management, scenario analysis and stress testing, disclosure and reporting, business continuity, data collection and analysis, and development of green financial products and services. Chapter 7 discussed how CBJ will shape its microprudential framework focused on climate-related risks, while this chapter focuses more on what FIs can expect from CBJ’s regulations and supervisory guidance, both on the risk management and the green finance sides.

**Supervisory guidance and regulations will be split into two categories:** (a) raising awareness and sensitizing FIs regarding the upcoming financial regulations and encouraging FIs to take early action and (b) formally mandating regulations (figure 8.1). Most of the country examples so far have been focused on issuing the first type of supervisory guidance. For example, the Dutch Central Bank issued a report discussing good practices for integrating climate-related risk management in the banking sector.<sup>38</sup> Similar nonbinding guidelines were issued by other central banks or banking supervisors, such as BaFin in Germany, the Monetary Authority of Singapore, and the Bank of England, among others.<sup>39</sup>

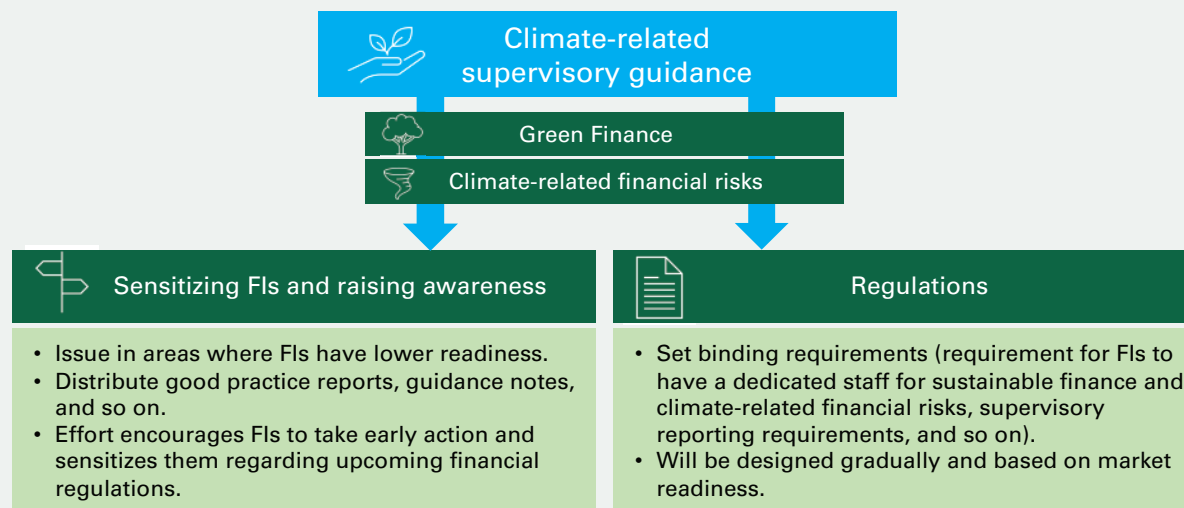
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38 De Nederlandsche Bank, “Good Practice: Integration of Climate-Related Risk Considerations into Bank’s Risk Management,” <https://www.dnb.nl/media/jwtjyvfn/definitieve-versie-gp-en-qa-klimaatsico-s-banken.pdf>.

39 BaFin Germany, “Guidance Notice on Dealing with Sustainability Risks,” January 16, 2020, [https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Meldung/2019/meldung\\_191220\\_MB\\_Nachhaltigkeitsrisiken\\_en.html](https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Meldung/2019/meldung_191220_MB_Nachhaltigkeitsrisiken_en.html); MAS (Monetary Authority of Singapore), “Sustainability Report 2021/2022,” July 2022, <https://www.mas.gov.sg/publications/sustainability-report/2022/sustainability-report-2021-2022>; and Bank of England “Enhancing Banks’ and Insurers’ Approaches to Managing the Financial Risks from Climate Change,” supervisory statement, 2019, <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/enhancing-banks-and-insurers-approaches-to-managing-the-financial-risks-from-climate-change-ss>.



**Figure 8.1: Two categories of CBJ’s climate-related supervisory guidance**



Source: Original figure for this strategy.  
 Note: FIs = financial institutions.

**Some financial regulators have started integrating climate-related considerations into formal financial regulations.** For example, in the Middle East and North Africa region, the Central Bank of Egypt issued (in November 2022) a binding Sustainable Finance Regulation, which includes, for example, a requirement for banks to establish an independent department for sustainability and sustainable finance that reports directly to the chief executive officer (managing director), as well as a requirement to integrate policies and procedures for sustainable finance within their credit and investment policies. In addition, banks are required to prepare annual sustainability reports and to consult environmental experts accredited by the Ministry of Environment to assess the environmental risks of large corporate projects to be financed by the banks. In Morocco, as a follow-up to the climate risk assessment for the banking sector, Bank Al-Maghrib is considering issuing regulations or supervisory guidance on climate-related financial risk management.

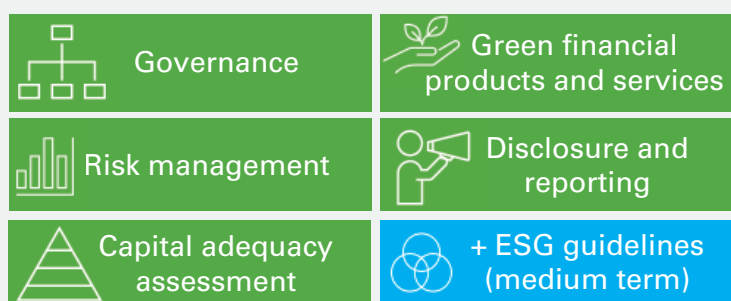
**Central Bank of Bangladesh is among the few financial regulators who have already issued concrete regulatory requirements linked to green finance.** For example, according to the “Sustainable Finance Policy for Banks and FIs” that was published in 2020, FIs will receive a “sustainability rating” every year, which will be based on their performance in environmental, social, and governance (ESG) matters. FIs are also required to set specific green finance targets and report on them on a quarterly basis (banks are expected to give out 15 percent of their loans for sustainable financing, including 2 percent for green financing). In addition to the examples mentioned, to promote effective management of risks arising from climate change and environmental hazards as well as to promote financing to green or sustainable projects, the Central Bank of Philippines issued three circulars in 2020–22.

**So far, the financial sector’s “risk” dimension (managing climate-related financial risks) has received relatively more attention from international standard-setting bodies than the “opportunity” dimension (mobilizing green finance).** The related international good practices are relatively more developed for the risk management aspect. However, some supervisory measures can be equally relevant to the risk and opportunity sides of greening the financial sector; for example, areas such as governance, strategy, and disclosure can span risk management and green finance pillars. CBJ’s regulations and supervisory guidance will encompass both dimensions, with most of the opportunity side under this strategy covered in chapter 11.



**CBJ will use soft supervisory guidance in areas where FIs' readiness is lower.** It will raise FIs' awareness about good practices and piloting new technical tools, models, and metrics, for instance. For that, CBJ will offer ongoing supervisory engagement and discussions as part of the supervisory review process, publish notes on climate-related financial risks and on mobilizing green finance, issue consultation papers, and more. While raising awareness and sensitizing FIs can reduce information asymmetry and level the playing field, regulations will be needed to ensure consistency in market practices and to prevent market players from anticompetitive conduct, cherry-picking, and greenwashing. CBJ will adopt a gradual approach and follow the proportionality principle in moving from high-level directives to more precise and prescriptive guidelines. The following subsections provide more detail on the main areas of CBJ's expected supervisory guidance and regulations.

**Figure 8.2: Focus areas of CBJ's climate-related supervisory guidance and regulations**



Source: Original figure for this strategy.

**In the medium term, CBJ plans to broaden the scope of this strategy to create a sustainable finance strategy that encompasses the complete range of ESG factors.** CBJ will revise its supervisory guidance to align with this expanded approach, such as by releasing ESG guidelines for Jordan's financial sector (figure 8.2). Note, however, that climate-related and environmental (E pillar) and governance (G pillar) considerations already have an overarching presence in this strategy. Social factors are most visible through the green financial inclusion lens. Yet further work will be needed to identify financial risks and opportunities stemming from social factors in Jordan, especially as climate risk drivers and environmental degradation are intrinsically connected to increasing social risks. Therefore, in the medium term, CBJ will explore ways to guide the financial sector in incorporating social risks and ESG concepts more comprehensively into Jordan's financial sector's overall risk management, operational, and financing frameworks.

**From a sectoral point of view, CBJ will issue regulations and supervisory guidance for banks, insurers, and MFIs, following a gradual and proportional approach.** Banks will go first, followed by insurers and microfinance institutions (MFIs). The Finance Companies and Credit Bureaus Supervision Department of CBJ will strive to adopt the best practices and expertise from Jordan's banking industry in implementing the Basel Committee on Banking Supervision (BCBS) principles, in accordance with the principle of proportionality to the extent feasible. Given existing capacity constraints, MFIs will likely not be required to implement sophisticated climate-related practices, and the focus will be on strengthening corporate governance arrangements, strengthening capacity, risk management, and related controls.

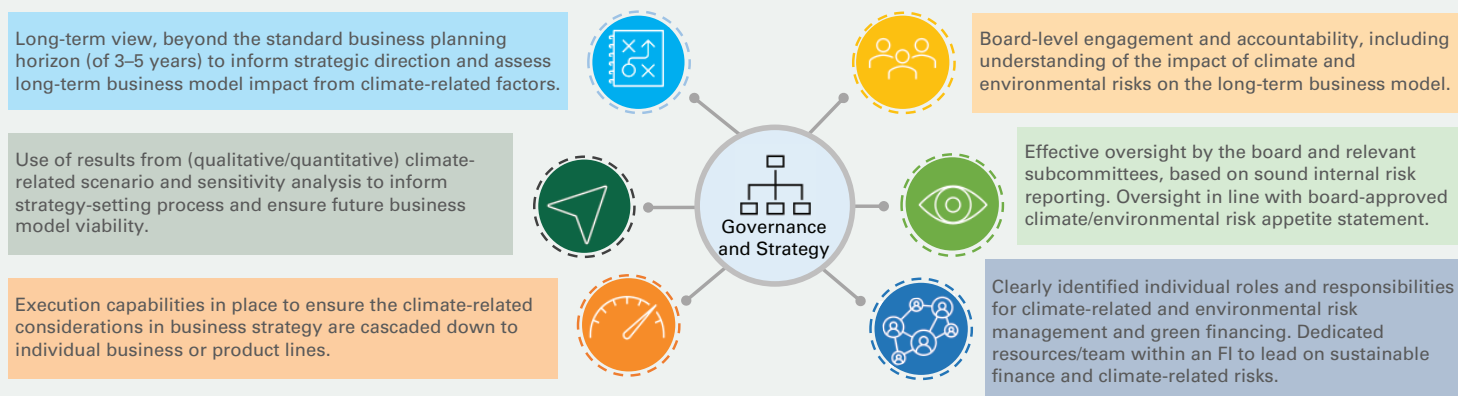
## 8.1 GOVERNANCE

**CBJ expects FIs to set up their governance systems to enable effective integration of climate-related considerations into their operations, risk management frameworks, policies, financing activities, and more.**

Following the proportionality principle, climate-related considerations in the governance area should adequately reflect the nature and complexity of FIs' activities (figure 8.3). CBJ will require FIs to:

- Ensure active engagement and commitment from board and senior management in facilitating and mandating the incorporation and implementation of climate-related measures into FIs' business models, strategies, and operational activities.
- Ensure the effectiveness of FIs' board and senior management oversight of climate-related factors, including their capacities to address climate-related financial risks in a forward-looking manner, assess business opportunities, and set up processes and criteria in the green financing area.
- Ensure that roles and responsibilities for climate-related considerations (management of climate-related financial risks and green financing activities) are clearly assigned, adequate, and appropriately documented in relevant policies, procedures, and controls.
- Establish dedicated teams, organizational units, or departments responsible for leading and coordinating climate-related and sustainability aspects within FIs. A similar outcome may be achieved by integrating the respective responsibilities within the functions of existing staff.

**Figure 8.3: Good practice examples for integrating climate-related considerations in governance and strategy areas**



Source: Adjusted from the World Bank, "Toolkits for Policy Makers to Green the Financial System", 2021.

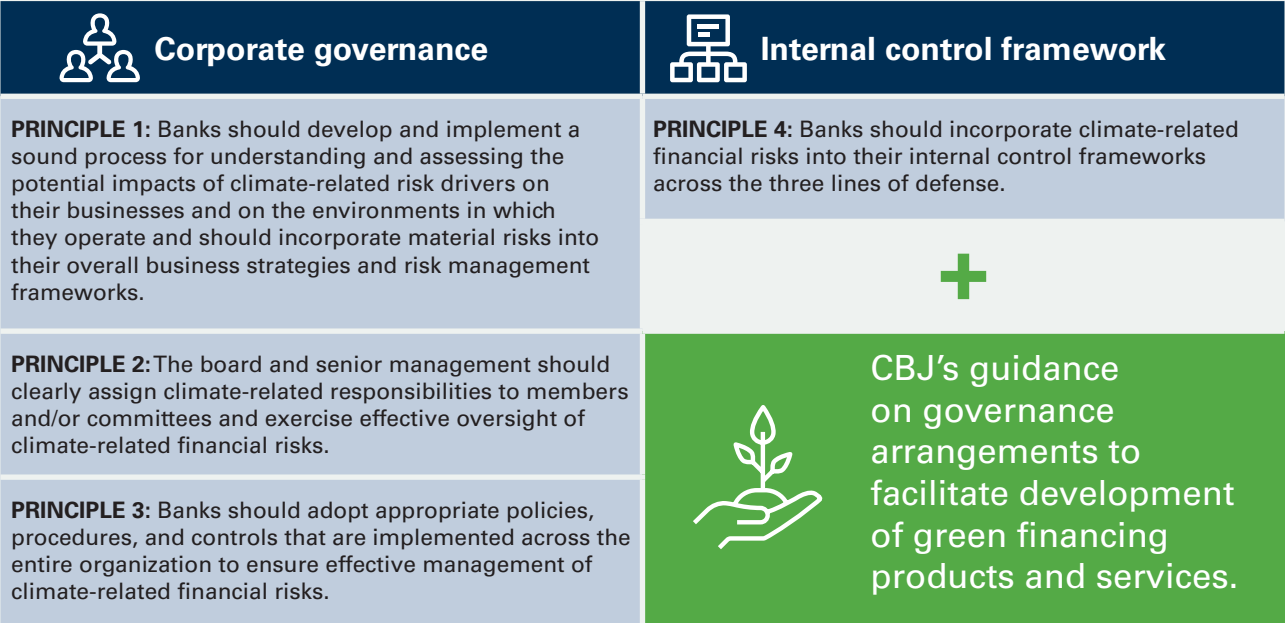
Note: FI = financial institution.

# Banking sector

**CBJ may review the existing regulatory requirements on corporate governance in the banking sector, to add considerations linked to climate-related financial risks and green finance products and services.** For example, this may include amending the instructions on corporate governance for banks (no. 63/2016) and the Instructions on internal control systems (no. 35/2007). However, CBJ will consider whether it is more effective to amend existing regulations or to issue separate regulations focusing specifically on climate-related considerations in governance.

**Following BCBS principle 4, banks will be required to integrate climate-related financial risks into their internal control frameworks across the three lines of defense.** The first line of defense involves FIs’ staff, who could conduct initial climate-related assessments as part of broader client evaluations. The second line of defense, the risk function, should be responsible for undertaking climate-related risk assessment and monitoring independently from the first line of defense. This includes challenging the initial assessment conducted by the first line of defense, while the compliance function should ensure adherence to applicable rules and regulations. The third line of defense is internal audit, providing an independent review (figure 8.4).

**Figure 8.4: BCBS principles on climate-related considerations for governance and internal control in the banking sector**



Source: Adapted from BCBS, “Principles for the Effective Management and Supervision of Climate-Related Risks,” 2022.  
 Note: CBJ = Central Bank of Jordan.



## Microfinance institutions

**Climate-related financial risks can have an even more significant impact on MFIs than on banks or other FIs in Jordan, partly because MFIs serve beneficiaries who may be more vulnerable to climate change hazards.**

To the extent possible, MFIs should aim to implement good governance principles followed by the banking sector (on a proportional basis) in the climate-related area, to enable them to evaluate and address climate-related financial risks and opportunities in their loan policies, business model, strategy, and so on.

**MFIs in Jordan provide financial services to economically vulnerable people (mostly low-income populations and microentrepreneurs) with the goal of helping them achieve financial self-sufficiency.** MFIs are smaller and have limited operational scope and less diversified loan portfolios than banks. Their size and constrained financial resources also affect their technical capacity and define a potential scope of governance, internal control systems, and processes, including for assessing and managing climate-related financial risks and opportunities.

**After conducting market dialogue and the MFIs' survey, and on the basis of further assessment of market readiness, CBJ might gradually review the existing guidelines or issue new regulations or guidelines on climate-related considerations for MFIs' governance.** For example, one option is to amend (following the proportionality principle) the regulatory instruction for corporate governance (no. 10/2020) for microfinance companies. CBJ will consider issuing separate regulations if deemed more feasible after consultations with MFIs, instead of adjusting existing ones. Good practice for MFIs, as for banks and insurers, will be to have dedicated staff responsible for coordinating climate-related aspects within the MFI or, depending on capacity level, to integrate these functions as part of the existing staff's duties, with an oversight from senior management, and adopt necessary internal policies and procedures with climate-related considerations, including for internal control. To avoid overburdening lower-capacity MFIs, CBJ will encourage the use of existing systems to integrate climate-related considerations, if those systems meet minimum good practice standards.

## Insurance sector

**Having a robust governance mechanism that reflects material climate-related factors is equally important for the insurance sector.** CBJ is increasingly strengthening internal capacity for insurance sector regulation and supervision, enhancing dialogue with the insurance industry, and developing an insurance supervisory framework aligned with international good practices. As part of developing this broader supervisory and regulatory framework, CBJ will guide insurers in establishing climate-related governance arrangements. These arrangements will build on the latest recommendations under the Insurance Core Principle for Corporate Governance issued by the International Association of Insurance Supervisors (IAIS). Thus, CBJ's supervisory guidance for insurance governance can entail the following (but not be limited to):

- Guidelines and requirements for the board of directors to engage in oversight of climate-related considerations within the insurance business.
- Requirement to assign responsibilities across all relevant layers of the organization for climate-related considerations. In addition, there may be a requirement to establish structures with appropriate expertise, such as an internal risk committee focused (at least partly) specifically on climate-related (or broader-sustainability) aspects. In the United Kingdom, for example, the Prudential Regulation Authority requires insurers to appoint a senior manager to be responsible for assessing the financial exposures and systemic impacts related to climate risk in its insurance portfolios.







- Requirement to take action to facilitate understanding and discussion of climate risks at board and board committee levels and, where necessary, provide appropriate training for board members.
- Requirement to incorporate and assess climate-related risks *and opportunities* (such as developing climate-responsive insurance products) as part of the annual financial planning and the long- and short-term strategic planning processes. Insurers should also ensure that impacts of climate change are well represented in existing risk categories.

**Examples of countries integrating climate-related considerations into insurers’ governance and related supervisory frameworks are emerging.** For example, effective since 2021, climate-related and environmental risks have become a standard part of Central Bank of Netherlands’ fit and proper assessments for board members of insurers, banks, and pension funds. This means that climate-related and environmental risks will feature more prominently in the assessment interviews.<sup>40</sup>

## 8.2 RISK MANAGEMENT

**Supervisory guidance and regulations will be issued to set the stage for a coherent, harmonized, and proportional approach to managing climate-related financial risks in Jordan’s financial sector.** The materiality of risks (as well as size and complexity of FIs) will be considered in designing and implementing the supervisory guidance and regulations. FIs are expected to develop qualitative and quantitative metrics to assess, monitor, and report climate-related financial risks, and CBJ will engage with FIs to facilitate the alignment between CBJ’s internal metrics and those used by FIs. Figure 8.5 provides several selected good practice examples of management of climate-related financial risks. In certain cases, managing climate-related financial risks may potentially affect availability and affordability of transition and adaptation financing (chapter 9); therefore, CBJ will develop climate-related regulations that take into consideration how to minimize unintended exclusionary effects.

**Figure 8.5: Selected good practice examples in climate-related financial risk management**

 <p>Risk identification process considers short- and long-term risks, using forward-looking data.</p>	 <p>Risk assessment informs understanding of the potential current and future impacts of physical and transition risk factors on clients, borrowers, counterparts, and investees.</p>	 <p>Internal reporting systems are capable of monitoring material climate-related financial risks and producing timely information to ensure effective board and senior management decision-making.</p>
 <p>Climate-related financial risks are integrated into the ICAAP and ORSA (once readiness is in place), including through scenario analysis.</p>	 <p>Risk mitigation plans developed once material exposures are identified.</p>	 <p>Measures and frameworks are in place to ensure preparedness for natural disasters and other immediate environmental crises.</p>

Source: Adapted from World Bank, “Toolkits for Policy Makers,” 2021.





Note: ICAAP = internal capital adequacy assessment program; ORSA = own risk and solvency assessment.

40 “Application Paper on the Supervision of Climate-Related Risks in the Insurance Sector” (International Association of Insurance Supervisors, Basel, Switzerland, 2021). <https://www.iaisweb.org/uploads/2022/01/210525-Application-Paper-on-the-Supervision-of-Climate-related-Risks-in-the-Insurance-Sector.pdf>.

## Banking sector

As indicated in chapter 3, CBJ’s survey indicated significant gaps in the banking sector when it comes to climate risk management. Only 29 percent of banks mentioned that climate-related risks are or will soon be integrated into their broader risk management framework. To comply with CBJ’s regulations and supervisory guidance, banks will be expected to identify, monitor, and manage all climate-related financial risks that could materially impair their financial condition, including liquidity position and capital resources. This underpins several areas, as outlined in BCBS’s principles 6 to 11, such as integrating climate-related data processes in management monitoring and reporting systems (figure 8.6).

**Figure 8.6: Selected BCBS principles for climate-related risk management in the banking sector (streamlined)**

 Risk management process	 Management monitoring and reporting	 Management of credit risk
<p><b>Principle 6:</b> Banks should identify, monitor, and manage all climate-related financial risks that could materially impair their financial condition, including their capital resources and liquidity positions.</p>	<p><b>Principle 7:</b> Risk data aggregation capabilities and internal risk reporting practices should account for climate-related financial risks.</p>	<p><b>Principle 8:</b> Banks should understand the impact of climate-related risk drivers on their credit risk profiles and ensure that credit risk management systems and processes consider material climate-related financial risks.</p>
<div style="text-align: center;">  <b>Market, liquidity, operational, and other risks</b> </div>		
<p><b>Principle 9:</b> Banks should understand the impact of climate-related risk drivers on their market risk positions and ensure that market risk management systems and processes consider material climate-related financial risks.</p>		
<p><b>Principle 10:</b> Banks should understand and consider the impact of climate-related risk drivers on their liquidity risk profiles.</p>		
<p><b>Principle 11:</b> Banks should understand and consider the impact of climate-related risk drivers on their operational risk.</p>		

Source: Adapted from BCBS, “Principles for the Effective Management and Supervision of Climate-Related Risks,” 2022.

**For credit risk specifically, CBJ will review and, where appropriate, amend the following (and possibly more) instructions for integrating considerations of climate-related financial risks into a risk management framework:** (a) instructions on large-exposure limits and credit-granting controls (no. 2/2019) and (b) instructions for classification of credit facilities and calculation of impairment provisions and reserves for general banking risks (no. 47/2009). In addition to (or instead of) amending these existing regulations, CBJ may decide to issue separate regulations on climate-related financial risk management. In addition to credit risk, banks are expected to consider material climate-related risk drivers for liquidity, market, and operational risks.



## Microfinance institutions

**CBJ's consultations with MFIs will identify the extent to which the microfinance sector could realistically adopt climate-related financial risk assessment and management practices in the next five years.** Limited technical capacity will likely constrain most MFIs in adopting more sophisticated climate risk tools and systems. Therefore, CBJ's supervisory guidance will follow a gradual approach, initially focused on piloting basic climate risk assessment and management measures and metrics, which will be informed by the first climate risk assessment for Jordan's financial sector.

**For MFIs, CBJ will start with raising awareness and sensitizing FIs, followed by issuing new regulations on climate-related financial risk management.** This can include a review of existing requirements for the internal control systems for microfinance companies (no. 11/2020), to add climate-related considerations (for example, a requirement for the internal control framework to include a clear definition and assignment of climate-related responsibilities and reporting lines across different lines of defense). CBJ also stands ready to transfer knowledge and experience from the climate risk assessment to MFIs to support the development of technical tools for identification, assessment, and management of climate-related financial risks in the microfinance sector.

**The microfinance sector has strong interlinkages with green financial inclusion, and CBJ will reflect this aspect in climate risk management supervisory guidance.** MFIs can play an important role in helping vulnerable clients enhance their resilience to climate shocks. MFI activities target mainly micro and small enterprises (including women-led enterprises), most of which are ill-equipped for assessing and addressing complex risk factors such as those linked to climate change. MFIs could leverage their network and provide advice to their clients on increasing climate resilience, which could ultimately become an effective risk management strategy for MFIs themselves.

## Insurance sector

**Insurers are exposed to climate change both as underwriters and as investors and could be affected by a variety of climate-related financial and nonfinancial (for instance, legal) risks.** Insurance companies in Jordan are expected to gradually develop and implement frameworks and systems for effective identification, assessment, monitoring, and management of climate-related risks. Given the potential impact of climate-related financial risks on an insurer's solvency position, insurers are expected to consider such impacts within the existing categories of risks and, where appropriate, to update the existing risk management system. CBJ's consultations with insurers, including the upcoming survey, will help define the sequencing and proportionality in new regulations for climate-related risk management.

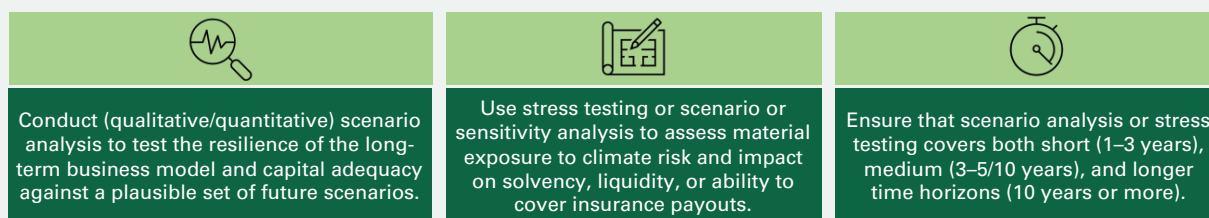
**As market readiness increases, CBJ will require a more holistic integration of climate-related risks into insurers' risk management frameworks.** Those frameworks should include analysis of potential effect on assets, liabilities, and the overall business model. CBJ expects insurers to identify material physical, transition, and liability risks inherent in their business portfolios, assess the implications for their underwriting strategy, and develop policies and procedures to integrate the management of these risks as part of their enterprise risk management framework as well as their risk appetite statement. Insurers should consider both the short term and the longer term (including the business planning horizon and duration of the policies) when assessing the impact of climate-related risks. CBJ's supervisory guidance and regulations will follow the climate-related guidelines from the IAIS and the Sustainable Insurance Forum.

## 8.3 CAPITAL ADEQUACY ASSESSMENT

**An adequate capital base is crucial to absorb losses caused by climate-related risks.** Assessing capital adequacy against the potential impact of climate-related risk drivers will be part of CBJ’s supervisory guidance (figure 8.7). These assessments will require applying scenario analysis, stress testing, or sensitivity analysis to evaluate solvency position, with climate-related factors integrated as part of existing risk categories. The complexity of the required assessments will be proportional to an FI’s size, business strategy, investment portfolio composition, and risk profile. CBJ recognizes that climate-related and environmental risks will likely be incorporated into FIs’ internal capital and liquidity adequacy assessments gradually, as methodologies and data for analyzing these risks are still improving. As discussed in chapter 7, CBJ does not expect to make climate-related adjustments in the rules defining minimum regulatory capital requirements any time soon.

**Stress testing and scenario analysis can be useful tools in assessing FIs’ business model resilience to potential climate effects.** BCBS principle 12 encourages banks to make use of scenario analysis to assess the resilience of their business models and strategies to a range of plausible climate-related pathways and determine the impact of climate-related risk drivers on their overall risk profile. CBJ will integrate climate-related factors into broader business model assessment as part of the supervisory review process.

**Figure 8.7: Capital adequacy assessment against climate-related effects**



Source: Adapted from BCBS, “Principles for effective risk management and supervision of climate-related risks,” 2022.

### Banking sector

**CBJ regulates the calibration of both sensitivity analysis and scenario stress tests in the banking sector.** In sensitivity analysis, banks in Jordan are required to analyze how stress situations (for example, increasing default rates, delayed loan repayments, and changes in market prices) can affect their balance sheets, notably through nonperforming loans, increased provisions, and so forth. When it comes to scenario analysis, banks are led to calculate the impact of two scenarios (multifactorial shock) combining nonperforming loans, provisions, profits, and their capital adequacy ratios. In addition to conventional financial risks (credit, market, liquidity, and operational), banks are required to conduct stress tests to assess the potential impact of the geopolitical tensions in the world, as well as possible climate change effects.

**In March 2022, CBJ issued circular for integration of the climate-related risk perspective into the full set of stress tests for banks.** Given that this is a new area, CBJ did not provide scenarios or variables and intentionally left more flexibility for banks to conduct stress testing that integrates climate-related aspects (including both physical and transition risks). Regarding physical risks, for example, banks were required to analyze the potential impact of extreme events (such as floods, droughts, and global warming) that may generate financial losses. For

transition risks, the sensitivity analysis had to be conducted by assuming that credit granted to companies with high levels of carbon emissions (such as mining and petrochemical companies) became nonperforming. Going forward, findings of the climate risk assessment (chapter 5) will inform further development of methodologies, assumptions, data collection, and stress scenarios and will be used to update and complement CBJ's supervisory guidance on stress testing. Box 8.1 provides a brief overview of key steps in assessing the climate-related credit risk drivers, as present by ECB.

### Box 8.1: Assessment of capital adequacy against climate-related credit risk factors

**As presented in the European Central Bank's overview of good practices for climate-related and environmental risk management, the following are several high-level steps for assessment of capital adequacy against climate-related credit risk drivers<sup>a</sup>:** (a) prepare different climate scenarios (such as those recommended by the Network for Greening Financial Systems and the Intergovernmental Panel on Climate Change) for physical and transition risks; (b) use these scenarios to simulate and model expected changes in earnings before interest, taxes, depreciation, and amortization (EBITDA), and estimate the probability of default (PD) at client level under the various scenarios; (c) aggregate these stressed client-level PDs to sector portfolio level, which allows banks to generate sector-level heatmaps to identify which sectors are most affected by those risks; and (d) calculate the difference between the stressed portfolio PD and the baseline portfolio PD, which is the exposure at risk due to climate-related risk. As the calculated difference surpasses the materiality threshold, an FI allocates a dedicated economic capital buffer for that amount of exposure at risk, addressing both transition and physical risks.

a. ECB (European Central Bank), "Good Practices for Climate-Related and Environmental Risk Management," 2022.

## Microfinance and insurance sector

**MFIs in Jordan are not permitted to operate as deposit-taking institutions, so they are not mandated to conduct regulatory capital adequacy assessment.** However, a simplified version of scenario analysis could still be useful to assess the financial viability of MFIs and their business model against climate-related risks. Once the microfinance sector is more mature in the climate-related area, CBJ could adjust some regulatory parameters to reflect both climate-related financial risks and opportunities.

**In the insurance sector, CBJ may require larger insurers to develop their own risk and solvency assessment (ORSA)<sup>41</sup> that integrates climate-related considerations.** Regulation may define prescriptive quantitative approaches based on a scenario that focuses on physical risk, transition risk, or both (for instance, using physical risk for the liability side and transition risk for the investment side). Insurers will be expected to explore forward-looking climate scenario analysis to assess current and prospective solvency positions under regular and stressful conditions with climate-related shocks. In the United Kingdom, for example, insurers are required to develop scenario analysis and stress testing, using all possible data in addition to historical data (including future trends in catastrophe modeling) to identify correctly the short- and long-term financial risks to their business model from climate change.

41 In the insurance sector, the Insurance Core Principles published by the IAIS call for supervisors to require insurers to undertake an ORSA. One of the outputs of an ORSA exercise is the determination of how much economic capital an insurer needs, based on its assessment of its own risks. This is a useful tool for capturing risks that are not covered in so-called pillar 1 or standardized capital frameworks, such as climate risks.





## 8.4 DISCLOSURE AND REPORTING

**Disclosure and reporting of climate-related information facilitates both enhanced climate risk management and green finance mobilization.** Publicly disclosed climate-related information contributes to market discipline and reduces information asymmetry. Structured data and information, if disclosed in a synchronized way by different FIs, can facilitate climate risk assessment, which ultimately contributes to a better understanding of climate-related exposures in the financial sector. Publicly available information can also reduce the cost of green investments.

**Effective disclosure and reporting require transformation along the value chain.** For FIs to be able to disclose and report climate-related information, they first need to get inputs from the clients or borrowers about their green profile. That requires public policies encouraging private sector disclosure and reporting (figure 8.8).

**Figure 8.8: Climate-related disclosure and reporting**

 Public reporting (disclosure)	 Regulatory reporting
<ul style="list-style-type: none"><li>Financial institutions publicly disclose (such as through annual sustainability reports) climate-related aspects of their governance, strategy, financial risk management, financing, and other practices, as well as climate-related data—for example, on GHG emissions.</li></ul>	<ul style="list-style-type: none"><li>Financial institutions regularly report qualitative and quantitative information to financial supervisor covering different climate-related dimensions linked to capital adequacy assessment, sectoral and geographical distribution of climate-related exposures, and so on.</li></ul>

Source: Original figure for this strategy.

Note: GHG = greenhouse gas.

**To ensure synchronization, CBJ's proportional regulations on disclosure and reporting for banks, insurers, and MFIs will be aligned with international frameworks.** CBJ will discuss with FIs the right sequencing, timeline, and scope of the disclosure and reporting, since 94 percent of banks in Jordan currently do not (voluntarily) disclose any financial risks related to climate change. Overall, the adoption of IFRS S2 (see box 8.2) will make climate risk disclosure mandatory (and banks in Jordan already apply IFRS).





**Templates for disclosure and reporting will be an integral part of CBJ's supervisory guidance.** They will help collect and aggregate—in a synchronized way—primary data and indicators linked to climate-related exposures, green financing flows, and so forth. CBJ expects to consult with the Ministry of Environment (MOENV) about templates so that the reported information could contribute to Jordan's MRV (for instance, collecting information on climate financing from the financial sector). To increase the reliability and accuracy of the disclosed and reported data and information, CBJ will consider requesting approval from FIs' management and the auditor on reports and disclosures. A gradual and proportional approach will help avoid overregulating the financial sector; FIs and CBJ should see mutual benefits from more-active climate-related reporting and disclosure, and sufficient preparatory time should be given to FIs.

## Public corporate disclosure

To develop public disclosure requirements, CBJ will coordinate with the Jordan Securities Commission, Amman Stock Exchange, MOENV, and other stakeholders that have a role to play in the disclosure and reporting value chain. Globally, the scope and extent of information to be disclosed vary across entities and jurisdictions:<sup>42</sup> approaches range from mandatory requirements to completely voluntary or comply-or-explain approaches. In Jordan, CBJ will likely start with voluntary guidelines, moving toward the comply-and-explain approach, which could become mandatory in the medium and longer terms. CBJ will consider requiring FIs (at least larger ones) to issue annual sustainability or green finance reports.

**CBJ's requirements for disclosure will be aligned with International Sustainability Standards Board (ISSB) standards and, on a higher level, with the recommendations of the Financial Stability Board (FSB) Task Force on Climate-Related Financial Disclosures (TCFD) (box 8.2).**<sup>43</sup> The TCFD recommendations for climate-related disclosures encompass four thematic areas: governance, strategy, risk management, and metrics and targets. Figure 8.9 provides several examples of disclosable information in each of these categories.

**Figure 8.9: TCFD's core elements of recommended climate-related financial disclosures**

 <b>Governance</b>	 <b>Strategy</b>	 <b>Risk management</b>	 <b>Metrics and targets</b>
<p>Disclose the organization's governance around climate-related risks and opportunities</p>	<p>Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.</p>	<p>Disclose how the organization identifies, assesses, and manages climate-related risks.</p>	<p>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p>
<ul style="list-style-type: none"> <li>■ Describe the board's oversight of climate-related risks and opportunities.</li> <li>■ Describe management's role in assessing and managing climate-related risks and opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</li> <li>■ Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.</li> <li>■ Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</li> </ul>	<ul style="list-style-type: none"> <li>■ Describe the organization's processes for identifying and assessing climate-related risks.</li> <li>■ Describe the organization's processes for managing climate-related risks.</li> <li>■ Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</li> </ul>	<ul style="list-style-type: none"> <li>■ Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</li> <li>■ Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks.</li> <li>■ Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</li> </ul>

Source: Adapted from TCFD, "Recommendations of the Task Force on Climate-Related Financial Disclosures: Final Report," June 2017.  
Note: GHG = greenhouse gas.

42 FSB (Financial Stability Board), "Stocktake of Financial Authorities' Experience in Including Physical and Transition Climate Risks as Part of Their Financial Stability Monitoring," July 22, 2020.

43 FSB established an industry-led task force: the Task Force on Climate-Related Financial Disclosures (Task Force). The Task Force was asked to develop voluntary, consistent climate-related financial disclosures that would be useful to investors, lenders, and insurance underwriters in understanding material risks.

## Box 8.2: International Sustainability Standards Board and recommendations on climate-related disclosure

**The International Financial Reporting Standards (IFRS) Foundation is a public interest organization established to develop globally accepted accounting and sustainability disclosure standards.** These standards are developed by its two standard-setting boards, the International Accounting Standards Board (IASB) and the International Sustainability Standards Board (ISSB).

**In March 2022, ISSB launched a consultation on two proposed standards:** (a) general sustainability-related disclosure requirements (S1) and (b) narrower climate-related disclosure requirements. Fundamentally, they build on TCFD's main pillars of recommended climate-related disclosures (S2). Consultations finished in July 2022, and new recommendations are expected to be issued in 2023 (ISSB has already tentatively decided on the effective date of January 2024 for some of the standards).

**ISSB's goal is to harmonize the range of different standards, frameworks, principles, and guidelines on climate and sustainability disclosure that have proliferated,** such as TCFD, the Sustainability Accounting Standards Board (SASB), and the Global Reporting Initiative. A move toward greater standardization and more consistent, high-quality sustainability-related reporting for corporates is the trend observed for ordinary financial reporting that has been systematized as International Financial Reporting Standards (IFRS).

**The ISSB standards will provide a comprehensive global baseline of sustainability disclosure that can be mandated and combined with jurisdiction-specific requirements** or requirements aimed at meeting the information needs of broader stakeholder groups beyond investors. Consistent with the approach taken for IFRS Accounting Standards issued by IASB, it is for jurisdictional authorities to decide whether to mandate use of the IFRS Sustainability Disclosure Standards issued by ISSB.

## Carbon footprint reports

**Some central banks and financial regulators have started publishing regular reports on carbon footprints from their own operations, including plans to reduce them over time.** Carbon reports can be of different levels of granularity. For example, they can show the estimated carbon footprint generated from central banks' or financial regulators' physical infrastructures (buildings, energy consumption, business traveling, and the like) or they can also include the carbon footprints from, for example, central banks' investment portfolios. Swedish Riksbank is reporting the carbon footprints of the assets in its foreign exchange reserves. This move comes with a commitment that from September 2022 on, the Riksbank will buy bonds only from companies that report their carbon footprints according to scopes 1 and 2.<sup>44</sup> The Bank of Estonia's pledge on climate change action also includes a commitment to assess the carbon footprint of the entire organization and set the target levels for reducing it, along with making a first assessment of the carbon footprint of the nonmonetary portfolio.

<sup>44</sup> Riksbank, "Carbon Footprint of the Riksbank's Foreign Exchange Reserves," updated January 19, 2023, [https://www.riksbank.se/en-gb/about-the-riksbank/management-of-the-gold-and-foreign-currency-reserve/the-foreign-currency-reserve/carbon-footprint-of-the-riksbanks-foreign-exchange-reserves/#:~:text=The%20carbon%20footprint%20amounted%20to,of%20the%20foreign%20exchange%20reserves](https://www.riksbank.se/en-gb/about-the-riksbank/management-of-the-gold-and-foreign-currency-reserve/the-foreign-currency-reserve/carbon-footprint-of-the-riksbanks-foreign-exchange-reserves/#:~:text=The%20carbon%20footprint%20amounted%20to,of%20the%20foreign%20exchange%20reserves;); and Riksbank, "Carbon Footprint of the Holdings of Corporate Bonds," updated June 5, 2023, <https://www.riksbank.se/en-gb/monetary-policy/monetary-policy-instruments/corporate-bonds/carbon-footprint-of-the-holdings-of-corporate-bonds/>.





**There are also Middle East and North Africa region examples of central bank and financial regulator initiatives on assessing carbon footprints.** The Central Bank of Egypt (CBE) directed all Egyptian banks to measure the carbon footprints generated in their headquarters. This step contributes to the fifth principle of CBE’s Guiding Principles for Sustainable Finance.<sup>45</sup> The CBE has also estimated its own carbon footprint.

**CBJ will follow a gradual approach for public carbon footprint reports.** First CBJ will consider estimating the carbon footprint from its own operations; over time, this will likely be expanded to include carbon footprints from foreign exchange reserves, refinancing facilities, and more. CBJ intends to issue a proportional requirement for FIs to start publishing their carbon footprint reports. This would be tied to the requirement to adopt and implement FIs’ transition plans: gradually, carbon footprint reports could be transformed into progress reports for transition plans (see more details in chapter 11). This information would also be critically important in tracking achievement of Jordan’s Nationally Determined Contribution targets through the MRV. The depth of the carbon footprint assessments (scopes 1 through 3) will be discussed with FIs and will depend on their readiness and data availability.

## Regulatory reporting

**Climate-related regulatory reporting will complement information that CBJ regularly receives from FIs.** One of the immediate uses of this new information will be to support a comprehensive climate risk assessment for Jordan’s financial sector. The FSB identified the following purposes for regulatory reporting:<sup>46</sup> to capture climate-related financial exposures, including those that might threaten financial stability (granular data with geographical and sectoral distribution); to support forward-looking assessments of climate-related risks to financial stability; and to capture climate-related risk transfer (for example, through insurance or capital markets) and mitigation (data on penetration of insurance and gaps in the protection it provides, as well as the provision of government guarantees and subsidies). Examples of indicators that CBJ may require FIs to report on a regular basis are provided in table 8.1. Reporting templates will be developed in consultation with FIs, and the scope and depth of regulatory reporting will depend on data gaps identified during the climate risk assessment.

45 CBE (Central Bank of Egypt), “Guiding Principles on Sustainable Finance,” last updated March 23, 2023, <https://www.cbe.org.eg/en/sustainability/sustainable-finance>.

46 FSB (Financial Stability Board), “The Availability of Data with Which to Monitor and Assess Climate-Related Risks to Financial Stability,” July 2021.

**Table 8.1: Examples of indicators linked to climate physical and transition risks that can be included in regulatory reporting**

Sector(s) and risk type	Exposure indicator(s)
Banking (and MFIs) (physical risks)	Loan distribution by level of physical risk.
	Bond and equity holdings by exposure to vulnerable firms located in risky areas.
Banking (and MFIs) (transition risks)	Loan distribution by carbon intensity.
	Equity and bond holdings by exposure to transition-sensitive sectors.
Insurance (physical risks)	Bond and equity holdings by exposure to vulnerable firms located in risky areas.
	Distribution of insurance policies by level of exposure to climate physical risks.
Insurance (transition risks)	Equity and bond holdings – exposure to carbon-intensive sectors and sovereigns.
Banking and insurance (physical risks)	Residential and commercial real estate exposure to physical risks (e.g., floods, fires, storms); also, possibly transition risks.

Source: Adapted from Financial Stability Board, “The Availability of Data with Which to Monitor and Assess Climate-Related Risks to Financial Stability,” July 2021.

## 8.5 GREEN FINANCIAL PRODUCTS AND SERVICES

**A significant part of CBJ’s supervisory guidance will be dedicated to leading the financial sector in mobilizing green finance and in developing green finance products and services.** Given the large size of the financial sector in Jordan, its wide customer base, and the important intermediary role that FIs play in Jordan’s economy, FIs are well-positioned to become key players in green finance mobilization and in enhancing the resilience of Jordan’s economy to climate-related shocks. CBJ’s green finance supervisory guidance and regulations can have a significant impact on the green finance supply side. Broader national policy measures will be needed to stimulate the demand side. Chapter 11 provides a detailed road map and CBJ’s action plan for facilitating the green finance mobilization, including examples of CBJ’s expected supervisory guidance and regulations. For example, CBJ will issue guidelines on green finance products and services to raise awareness among FIs, set the standard, and harmonize the design, consumer protection, and origination of green finance products and services. Linked to that, CBJ will also adopt the Green Loan Framework, which will provide a clear set of principles, definitions, and rules governing the green loan product, also providing guidance on the related risk assessment approaches, regulatory treatment, and so forth.

**Table 8.2: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>CLIMATE-RELATED SUPERVISORY GUIDANCE</b>													
<b>Capacity building and market dialogue</b>													
1.	Conduct insurance and MFIs' surveys; launch sectoral market consultations; collect data; develop internal capacity-building measures; and so on.												
<b>Benchmarking</b>													
2.	Conduct a benchmarking of current sectoral regulation in Jordan against the main climate-related international standards (e.g., BCBS, BIS, NGFS, TCFD, ISSB, AFI, SBFN), in areas such as governance, risk management, green finance products and services, disclosure and reporting, capital adequacy assessment, and others.												
<b>Issuing supervisory guidance and regulations</b>													
3.	Based on sectoral consultations and surveys, prepare draft climate-related regulations in the areas of governance (e.g., requirement to have staff covering sustainability/green finance function within FI); strategy (e.g., requirement to integrate climate-related considerations into strategic planning); risk management (e.g., requirement to integrate climate-related risk drivers into broader risk management and internal control framework); disclosure and reporting; green finance (see chapter 11); etc., along the lines discussed in this chapter. Consult drafts with financial institutions.												
4.	Issue climate-related regulations and, in certain areas where readiness is lower, prudential supervisory guidelines, starting with the banking sector and then followed by insurance and MFIs.												
5.	Issue ESG guidelines.												
<b>Carbon footprint reports</b>													
6.	CBJ to issue regular carbon footprint reports, with an initial focus on estimating carbon footprint from its operations, energy consumption, buildings, etc., and then later, with a focus on estimating carbon footprint from foreign reserves, relending facilities, etc.												
7.	As part of disclosure standards, issue requirement for FIs to publish their own carbon footprint and broader sustainability reports.												
<b>Follow-up</b>													
8.	Conduct follow-up consultations with financial sector participants to discuss the progress and challenges with the implementation of new climate-related regulations or guidelines.												

Source: Original table for this strategy.

Note: AFI = Alliance for Financial Inclusion; BCBS = Basel Committee on Banking Supervision; BIS = Bank for International Settlements; ESG = environmental, social, and governance; ISSB = International Sustainability Standards Board; MFIs = microfinance institutions; NGFS = Central Banks and Supervisors Network for Greening the Financial System; SBFN = Sustainable Banking and Finance Network; TCFD = Task Force on Climate-Related Financial Disclosures.













# INCLUSIVE GREEN FINANCE





**This chapter discusses synergies between greening the financial sector and strengthening financial inclusion in Jordan.** Given the great importance of the financial inclusion agenda and CBJ's active engagement in this area, CBJ aims to ensure strong interconnections between the Green Finance Strategy 2023–2028 and a new National Financial Inclusion Strategy 2023–2028. The first part of this chapter presents a conceptual framework on the links between greening the financial sector and green inclusive finance, and the nexus between climate risk and financial exclusion. The second part outlines the next steps that CBJ will take to facilitate inclusive green finance in Jordan. This chapter is also strongly connected to chapter 11.

## 9.1 INCLUSIVE GREEN FINANCE: A CONCEPTUAL FRAMEWORK

**Climate change, environmental degradation, and financial exclusion are closely interlinked.** The parts of the population that are most vulnerable to climate change and environmental degradation are also at high risk of financial exclusion. Low-income households and smallholder farmers are already at the margins of the financial system. Their livelihoods are also more exposed to climate-related and environmental risks than other sectors.<sup>47</sup> Micro, small, and medium enterprises (MSMEs) need funding to increase their resilience to environmental shocks and adopt greener technology. However, they face greater hurdles than larger firms in obtaining the necessary financing for such investment through the formal financial system.<sup>48</sup> For this strategy to be encompassing and effective, during its implementation CBJ will pay special attention to the financial inclusion of these segments of the economy.

**Inclusive green finance is particularly relevant for actors at the bottom of the economic pyramid.** Low-income households, rural communities, women, and MSMEs are particularly vulnerable to climate risk and financial exclusion. The FIs that serve them need support in managing and mitigating climate risk exposure, reducing the cost of climate and environmental due diligence, and providing affordable green finance. CBJ will work with FIs on risk mitigation, reduction of information costs, and mobilization of affordable green finance to ensure that marginalized and underserved segments of the economy are not financially excluded, thus promoting a just transition to a sustainable economy.

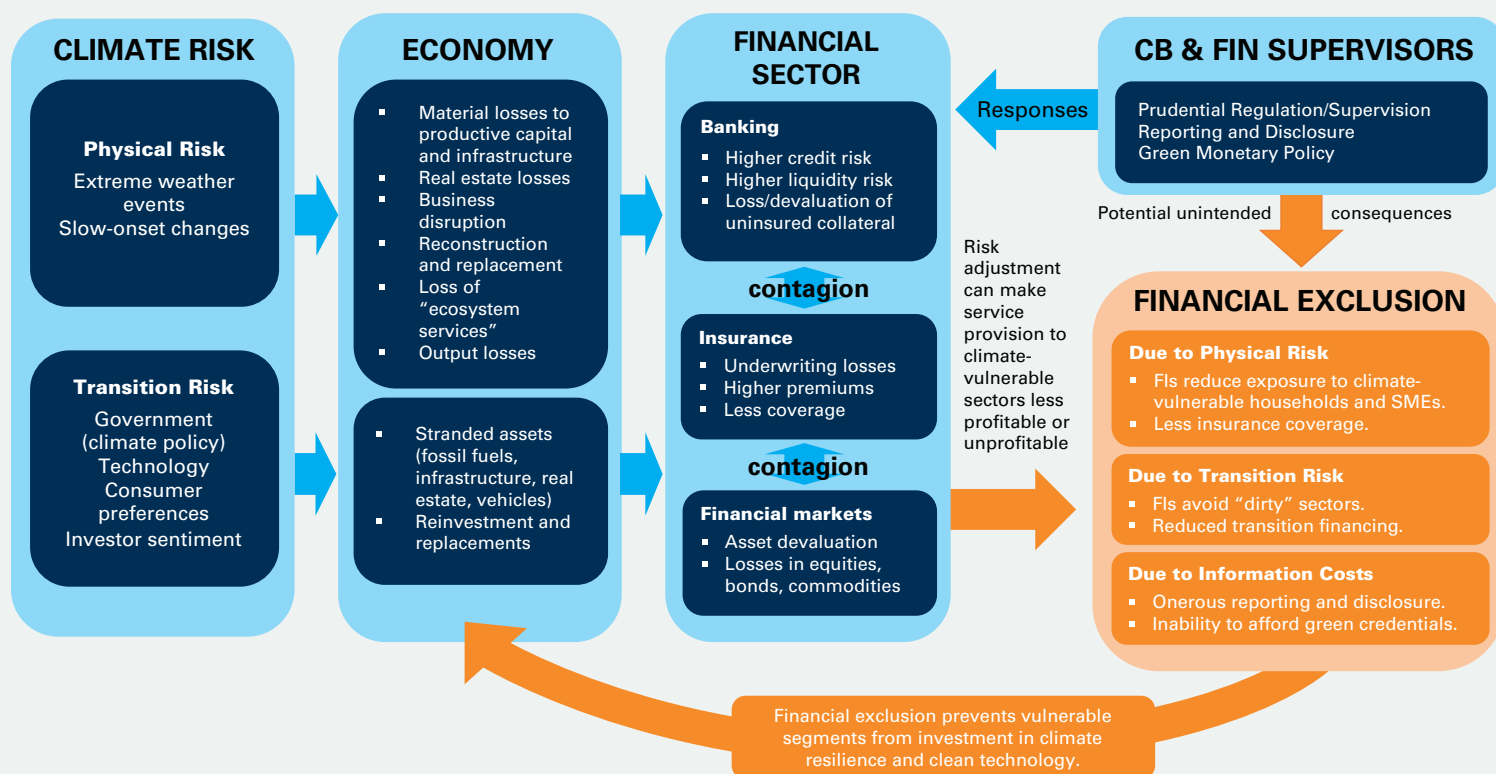
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47 Stephane Hallegatte et al., *Shock Waves: Managing the Impacts of Climate Change on Poverty* (Washington, DC: World Bank, 2016).

48 Robyn Owen, Geraldine Brennan, and Fergus Lyon, "Enabling Investment for the Transition to a Low Carbon Economy: Government Policy to Finance Early Stage Green Innovation," *Current Opinion in Environmental Sustainability* 31 (2018): 137–45.

**Climate change and environmental degradation can affect financial inclusion in three major ways.** This section will outline how climate and nature risk, specifically (a) physical risk and (b) transition risk, can alter the expected risk-adjusted returns for FIs in ways that may lead to a retrenchment of the financial sector away from the most exposed segments of the economy. Moreover, green regulatory and supervisory requirements, if not designed carefully, may have (c) *unintended* consequences that can exacerbate financial inclusion challenges. All three causal pathways can contribute to a vicious cycle whereby financial exclusion of vulnerable segments feeds back into strong exposure of the real economy to climate and nature risk, thus further increasing financial sector exposure to economic shocks (see figure 9.1). On the other hand, *inclusive green financial regulation and policy* can create a virtuous cycle, driving a just transition to a sustainable economy and more resilient financial system, as discussed later in the section.

**Figure 9.1: Potential nexus between climate risk and financial exclusion**



Source: CGAP (Consultative Group to Assist the Poor) additions in orange; NGFS (Network for Greening Financial Systems), "First Comprehensive Report: A Call for Action," 2019, <https://www.ngfs.net/en/first-comprehensive-report-call-action>; and BCBS (Basel Committee on Banking Supervision), *Climate-Related Risk Drivers and Their Transmission Channels* (Basel: Bank for International Settlements, 2021), <https://www.bis.org/bcbs/publ/d517.htm>.

Note: Fis – financial institutions.

**Physical risk may drive a retrenchment of the financial sector away from the most climate-exposed sectors of the economy.** Extreme weather events such as droughts and floods as well as slow-onset trends such as desertification have material effects on the real economy. They cause losses to productive capital and infrastructure, bring about business disruption, and raise replacement and rebuilding costs. Excessive heat is known to reduce labor productivity.<sup>49</sup> Moreover, the output of businesses that rely on ecosystem services such as fresh water (irrigation)

49 Claudia Custodio et al., "How Does Climate Change Affect Firm Sales? Identifying Supply Effects," June 30, 2022, <https://ssrn.com/abstract=3724940> or <http://dx.doi.org/10.2139/ssrn.3724940>.

and pollination is likely to shrink due to climate change, biodiversity loss, and environmental degradation.<sup>50</sup> These effects of physical risk on the real economy can be transmitted to the financial system:<sup>51</sup> if FIs witness evidence of increased credit risk from businesses and households affected by physical risks, one of the potential reactions is to deleverage their financing to those borrowers, leading to reduced availability and affordability of adaptation financing. Sectors of the economy that are particularly exposed to physical risk<sup>52</sup> and low-margin customers such as poor households and MSMEs would likely be the first to suffer from such financial sector retrenchment.

**Transition risk may also lead to financial sector retrenchment.** Changes in climate and environmental policies, technology, consumer preferences, and investor sentiment may have material repercussions for the real economy. This holds especially true for households and businesses that rely on fossil fuels and other sources of greenhouse gas (GHG) emissions, for example, in transport and livestock farming. Moreover, the fast pace of innovation in green technology means that some business investments in older technology will not pay off, leading to stranded assets.<sup>53</sup> Faced with heightened credit, liquidity, and market risk that derives from such transition risk, as well as concern about being seen as supporting “dirty” sectors of the economy (reputational and liability risk), FIs may have an incentive to reduce their exposure to such sectors. And while this turn away from high-emission and polluting sectors and production methods is welcome in principle, low-income households and MSMEs, even if they are keen to be part of low-carbon transition, face greater difficulties than larger firms in mobilizing the necessary capital to invest in green technology. If transition finance is not available for these sectors of the economy, only large and well-capitalized firms will be able to switch to green technology. Without appropriate policy measures in place, this would raise concerns about worsening inequality<sup>54</sup> and driving an unjust transition to a sustainable economy.<sup>55</sup>

**Regulatory action is needed to mitigate the climate change-related risks assumed by FIs; however, it should be carefully designed to minimize unintended exclusionary effects.** Financial supervisors at the Central Banks and Supervisors Network for Greening the Financial System (NGFS), the Basel Committee on Banking Supervision (BCBS), and elsewhere are assembling a growing list of supervisory actions and policies to safeguard the financial system against rising physical and transition risks.<sup>56</sup> Such guidance focuses on how FIs can enhance climate and nature risk management, but it only indirectly and partially speaks to financial inclusion concerns. Moreover, because regulatory actions to address climate-related risk have only recently been implemented, knowledge about unintended consequences of such policies is slight. For example, nongreen MSMEs might be more affected than

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50 IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) and IPCC (Intergovernmental Panel on Climate Change), “Biodiversity and Climate Change: Workshop Report,” 2021, [https://ipbes.net/sites/default/files/2021-06/20210609\\_workshop\\_report\\_embargo\\_3pm\\_CEST\\_10\\_june\\_0.pdf](https://ipbes.net/sites/default/files/2021-06/20210609_workshop_report_embargo_3pm_CEST_10_june_0.pdf).

51 NGFS (Network for Greening the Financial System), “First Progress Report,” October 2018, <https://www.ngfs.net/sites/default/files/medias/documents/818366-ngfs-first-progress-report-20181011.pdf>.

52 BCBS (Basel Committee on Banking Supervision), “Climate-Related Risk Drivers and Their Transmission Channels,” April 14, 2021, <https://www.bis.org/bcbs/publ/d517.htm>. The Financial Superintendency of Colombia (SFC) assessment found that some Colombian banks are about two to three times more vulnerable to flood hazards than most others because of high levels of exposure in more rural areas. See World Bank, “Not-So-Magical Realism: A Climate Stress Test of the Colombian Banking System,” 2021, <https://openknowledge.worldbank.org/handle/10986/36586>.

53 Mark Carney, “Breaking the Tragedy of the Horizon—Climate Change and Financial Stability” (speech, Lloyd’s of London, London, September 29, 2015); and Ben Caldecott, “Introduction to Special Issue: Stranded Assets and the Environment,” *Journal of Sustainable Finance & Investment* 7, no. 1 (2017): 1–13.

54 Lucas Chancel, Philipp Bothe, and Tancrede Voituriez, “Climate Inequality Report 2023,” 2023, <https://wid.world/wp-content/uploads/2023/01/CBV2023-ClimateInequalityReport-1.pdf>.

55 Katinka Wågsæther et al., “The Justice Pitfalls of a Sustainable Transport Transition,” *Environment and Planning F*, no. 1 (2–4) (2022): 187–206.

56 BCBS, “Principles for the Effective Management and Supervision of Climate-Related Financial Risks,” 2022, <https://www.bis.org/bcbs/publ/d532.htm>; and BCBS, “Frequently Asked Questions on Climate-Related Financial Risks,” 2022, <https://www.bis.org/bcbs/publ/d543.htm>.



larger polluting firms by implementation of environmental risk guidelines at banks.<sup>57</sup> To be clear, climate and nature risk management and reporting for FIs are of utmost importance for financial stability and sustainable economic growth in the future. The transaction costs associated with environmental due diligence, approval and certification, and monitoring and verification may be negligible for large businesses but may be significant for small ones.<sup>58</sup>

**Inclusive regulations ensure that reporting and disclosure requirements do not raise transaction costs to a point where serving low-margin customers such as MSMEs and rural households becomes unprofitable.**<sup>59</sup>

Inclusive policies and regulations also seek to avoid financial exclusion of sectors of the economy that cannot afford to provide the credentials necessary to show that they are green.<sup>60</sup> As a consequence, it is important that financial supervisors with a financial inclusion mandate, such as CBJ, design climate rules and regulations carefully and prepare for adjustments or counterbalance mechanisms should any unintended consequences materialize. Therefore, CBJ will consider integrating financial inclusion considerations into potential regulations and supervisory guidance linked to management of financial climate-related and environmental risks in Jordan's financial sector.

**The nexus between climate risk, financial instability, and financial exclusion can generate a vicious cycle of spiraling vulnerability.**

As the previous paragraphs have outlined, physical and transition risk and the unintended consequences of *noninclusive* climate policies and regulations can lead to a retrenchment of the financial sector away from low-income rural households and MSMEs, undoing years of gains in financial inclusion. Financially excluded sectors of the economy are unlikely to access the financial services necessary to adapt, invest in green technology, and increase their resilience to climate and environmental shocks. This in turn threatens to exacerbate the vulnerability of the real economy, with negative repercussions for financial stability. The vicious cycle is completed when FIs adjust to heightened physical and transition risk by retrenching further, discontinuing services to exposed, unprofitable clients. Considering this transmission channel, even supervisors concerned exclusively with financial stability have reasons to pay attention to financial inclusion.<sup>61</sup>

**On the other hand, inclusive climate regulation and policy can drive a virtuous cycle of growing resilience.**

If economic actors at the margins of the financial system can afford the services necessary to insure themselves against shocks, invest in green technology, and adapt to climate change and environmental degradation, they will increase their resilience (figure 9.2). For example, farmers can invest in more-resilient crops and irrigation technology or start new business endeavors in areas where farming becomes inviable.<sup>62</sup> MSMEs in the transport sector can use transition financing to reduce their dependency on gasoline and diesel and thus become more resilient to price shocks.<sup>63</sup> Clients that are more resilient to climate-related and environmental shocks may pose lower credit, market, and liquidity risks for the FIs that serve them.

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57 A recent empirical study shows that Brazil's proportional incorporation of climate risk into the ICAAP process in 2017 did not change the greenhouse gas emissions of large firms in polluting sectors. Smaller banks, which were exempt from the new regulations, filled the credit gap as the largest financial institutions retreated. However, this shift of smaller banks to larger customers led to a reduction in credit availability, firm size, and employment among small firms, their traditional clients. Faruk Miguel, Alvaro Pedraza, and Claudia Ruiz-Ortega, "Climate Change Regulations: Bank Lending and Real Effects," World Bank Policy Research Working Paper no. 10270 (Washington, DC: World Bank Group, 2022).

58 Luis Mundaca et al., "Transaction Costs Analysis of Low-Carbon Technologies," *Climate Policy* 13, no. 4 (2013): 490–513.

59 Anthea Coggan, Stuart Whitten, and Jeff Bennett, "Influences of Transaction Costs in Environmental Policy," *Ecological Economics* 69, no. 9 (2010): 1777–84; and Axel Michaelowa et al., "Transaction Costs of the Kyoto Mechanisms," *Climate Policy* 3, no. 3 (2003): 261–78.

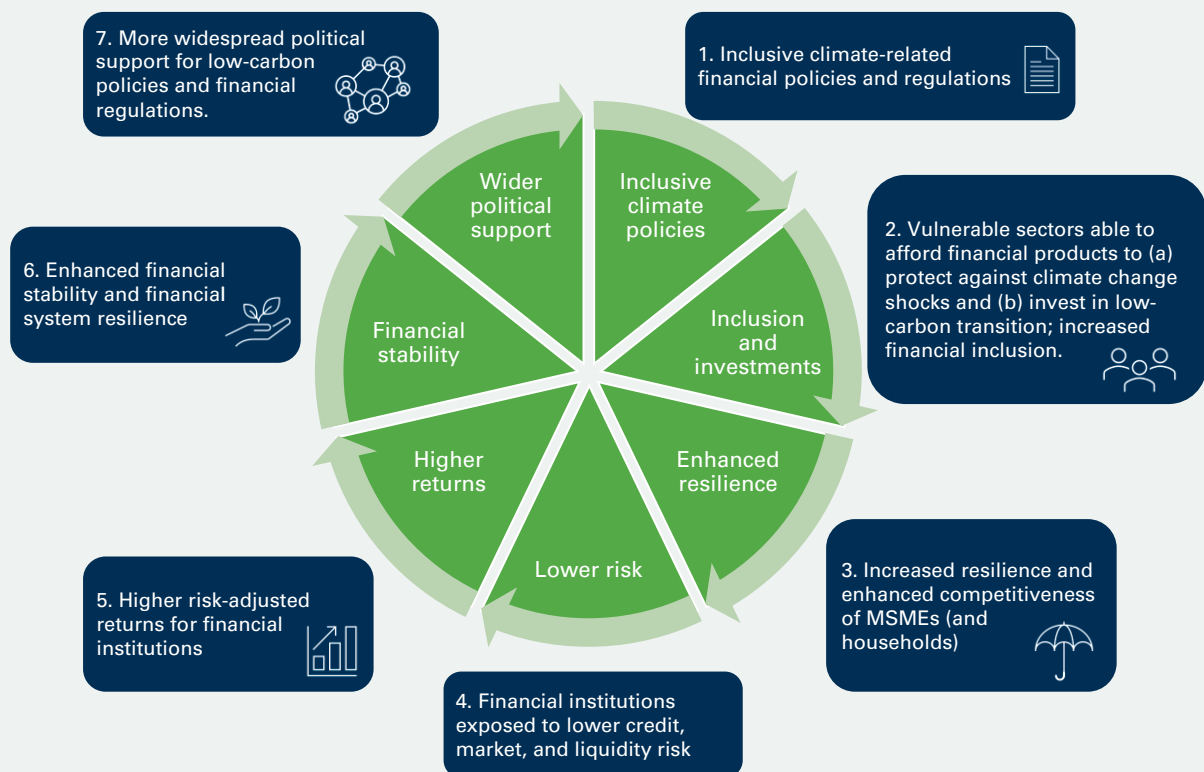
60 Steffen Brunner and Katrin Enting, "Climate Finance: A Transaction Cost Perspective on the Structure of State-to-State Transfers," *Global Environmental Change* 27 (2014): 138–43.

61 Rodrigo Coelho and Fernando Restoy, "Macroprudential Policies for Addressing Climate Related Financial Risks: Challenges and Trade-Offs," FSI Briefs no. 18, April 2023.

62 Tavneet Suri and William Jack, "The Long-Run Poverty and Gender Impacts of Mobile Money," *Science* 354, no. 6317 (2016): 1288–92.

63 Ramanditya Wimbardana Wimbadi, Riyanti Djalante, and Akihisa Mori, "Urban Experiments with Public Transport for Low Carbon Mobility Transitions in Cities: A Systematic Literature Review (1990–2020)," *Sustainable Cities and Society* 72 (2021): 103023.

**Figure 9.2: Virtuous cycle of green resilience and supporting policies**



Source: Original figure for this strategy.

Note: MSMEs = micro-, small, and medium enterprises.

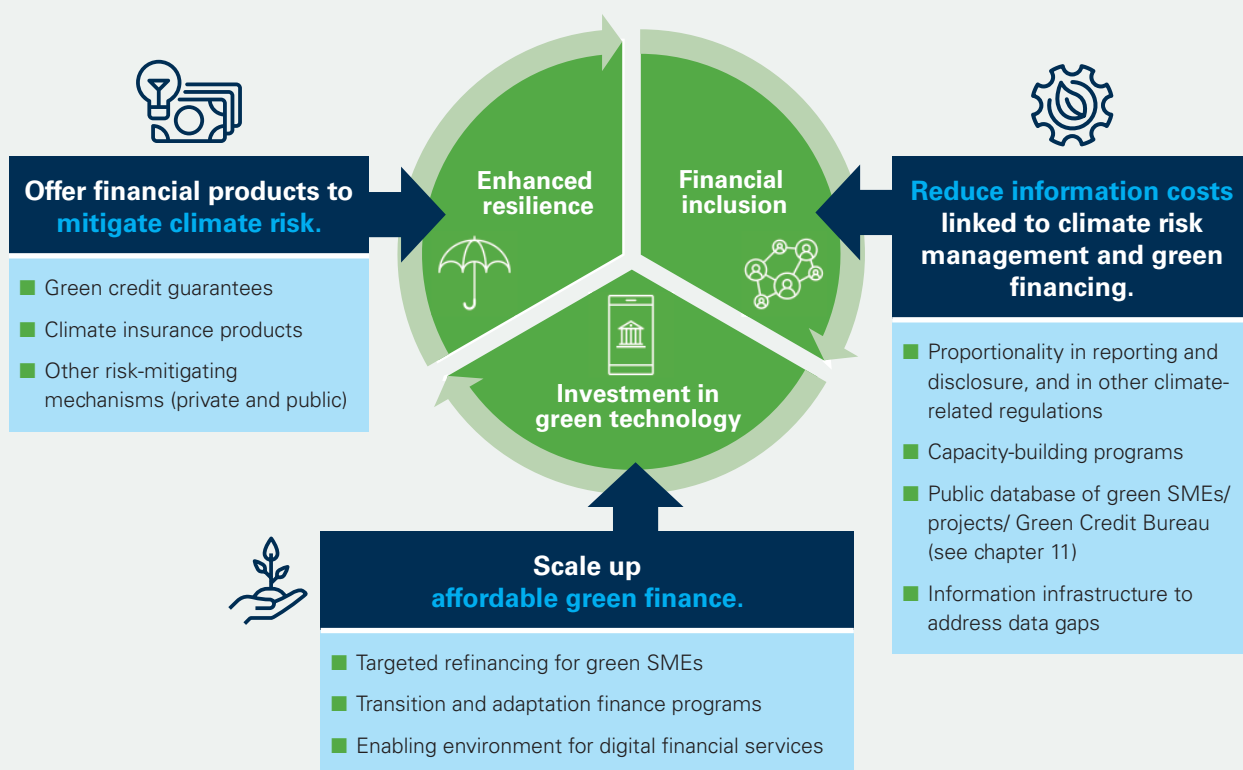
**Cooperation on a national level is important to set this virtuous cycle in motion.** Several policy tools for dealing with available physical and transition risk drivers of financial sector retrenchment are available.<sup>64</sup> Existing policies and instruments for financial inclusion can be greened, that is, adjusted to focus on climate-related and environmental risk, and green policy tools can be made inclusive, drawing from international sources of knowledge (figure 9.3). Regulation can be drafted to take information costs and capacity constraints into account.<sup>65</sup> In addition, technological progress can be leveraged to address market failures and reduce transaction costs using digital technology and innovation.<sup>66</sup> Even though this is a relatively new area that merits careful policy design and implementation, the relative scarcity of data and experience is no excuse for inaction.

64 Irene Monasterolo et al., “The Role of Green Financial Sector Initiatives in the Low-Carbon Transition: A Theory of Change” (Policy Research Working Paper no. 10181, World Bank, Washington, DC, 2022), <https://openknowledge.worldbank.org/handle/10986/38028>.

65 Ulrich Volz et al., “Inclusive Green Finance: From Concept to Practice” (London: Alliance for Financial Inclusion, 2020).

66 Douglas W. Arner et al., “Sustainability, FinTech and Financial Inclusion,” *European Business Organization Law Review* 21, no. 1 (March 2020): 7–35; and AFI (Alliance for Financial Inclusion), *Leveraging Digital Financial Services to Advance Inclusive Green Finance Policies* (Kuala Lumpur: AFI, 2022), <https://www.afi-global.org/publications/leveraging-digital-financial-services-to-advance-inclusive-green-finance-policies/>.

**Figure 9.3: Key entry points to set the virtuous cycle in motion**



Source: Original figure for this publication.

Note: MSMEs = micro-, small, and medium enterprises.

**Several tools can be leveraged to facilitate inclusive green finance.** (a) Existing risk mitigation instruments (for instance, for MSMEs and the agricultural sector) can be adjusted for green purposes, or new ones can be designed. Loan guarantee schemes, for example, can be designed to prioritize and better suit climate-vulnerable businesses and projects.<sup>67</sup> (b) Public-private partnerships in agricultural insurance can be adjusted to deal with changes in physical risk. Promoting development of climate insurance products that would fit the needs of different sectors beyond agriculture is also an important effort that should be an integral part of a broader insurance market development framework. (c) Reducing the cost of climate-related and environmental information for FIs is crucial. (d) Adaptation and transition finance should be made more widely available and affordable. (e) Regulation and supervision of digital financial services play a key role, too. Digital finance provides fast and affordable risk mitigation tools. Mobile money, for example, allows people affected by extreme weather events to receive emergency funds from friends and family, constituting an informal insurance network.<sup>68</sup> Digital payments can also provide low-cost rails for government-to-person payments in the wake of disasters, agricultural index insurance, and asset financing for solar panels and other green technologies. Moreover, in many jurisdictions where women are less likely to have collateral, data-based digital lenders can offer responsible financial access that narrows the gender gap.

67 Pietro Calice, "Greening Public Credit Guarantee Schemes for Net Zero," *Private Sector Development* (blog), World Bank, October 21, 2021, <https://blogs.worldbank.org/psd/greening-public-credit-guarantee-schemes-net-zero>; and AFI (Alliance for Financial Inclusion), "Green Credit Guarantee Schemes for MSMEs," June 2022, [https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs\\_260722.pdf](https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs_260722.pdf).

68 Emma Riley, "Mobile Money and Risk Sharing against Village Shocks," *Journal of Development Economics* 135 (November 2018): 43–58.



## 9.2 CBJ'S VISION FOR INCLUSIVE GREEN FINANCE IN JORDAN

**CBJ has several tools at its disposal to address climate and nature risk-driven financial exclusion and make green finance inclusive.** CBJ can steer against any emerging tendency of a climate and nature risk-induced financial sector retrenchment by setting into motion a virtuous cycle of financial inclusion, green investment, and greater resilience. Initially, CBJ can facilitate progress on the following three fronts: (a) help make green financing (adaptation and transition financing) affordable for climate risk–exposed sectors of the economy; (b) reduce climate-relevant information cost, and (c) facilitate the development of climate risk coverage and mitigation tools. In Jordan, smallholder farmers and herders, who are already at the margins of the formal financial system, may be at risk of financial exclusion. On the transition risk side, MSMEs in the transport and industry sectors may be particularly at risk of being shut out of the formal financial system.

**CBJ will consider adjusting existing MSME financing tools to serve green inclusive purposes.** The MSME share of the loan portfolio of banks in Jordan grew from 10 to 14 percent in 2018–20.<sup>69</sup> This proportion remains significantly below the average in peer economies in West Asia (37.7 percent) and North Africa (22.0 percent).<sup>70</sup> Risk mitigation instruments will play a crucial role in enhancing inclusiveness of green finance in Jordan, especially for small and medium enterprises. The operations of Jordan Loan Guarantee Corporation can integrate climate-related aspects, including by launching a dedicated green credit guarantee program, as chapter 11 discusses in more detail.

**Moreover, CBJ will initiate discussions with other authorities to consider devising new risk-sharing tools to counteract potential private sector retrenchment, for example, regarding insurance and microfinance services in the agricultural sector.** In addition, the development of the Green Loan Framework will consider financial inclusion. This framework can facilitate access to green finance for more vulnerable borrowers and will help minimize the risk of unintended consequences. Capital flows to MSMEs can also be mobilized by scaling up existing or establishing new green finance facilities, implemented through FIs, with a special focus on greening MSMEs. CBJ will also work with government and development partners<sup>71</sup> to streamline other green funding sources relevant for MSMEs, such as the Jordan Renewable Energy and Energy Efficiency Fund from the Ministry of Energy and Mineral Resources. However, remember that existing general constraints for MSMEs also apply to green financing. Eligibility for such financial flows is limited by inadequate levels of tangible collateral or guarantees, management experience, credit history, or insufficient cash flow for debt servicing and proper bookkeeping.<sup>72</sup>

**Transition finance may be needed to help MSMEs in polluting sectors transition to a sustainable economy, especially in the transport and industrial sectors.** After energy production, transport is the second (and industry is the third) largest source of GHG emissions in Jordan. Jordan's Economic Modernization Vision includes “developing sustainable transport systems and establishing of a network of electric charging stations.”<sup>73</sup> Many MSMEs in the

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69 CBJ, *Financial Inclusion Report 2018–2020* (Amman: Central Bank of Jordan, 2021).

70 EIB (European Investment Bank), “Banking in Jordan: Financing Corporates and SMEs in the era of COVID-19; Evidence from the EIB Bank Lending Survey,” 2022, <https://south.euneighbours.eu/publication/banking-jordan-financing-corporates-and-smes-era-covid-19/>

71 The joint project with the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) on innovating and greening MSME finance is another example. For more information see the GIZ website at <https://www.giz.de/en/worldwide/112806.html>.

72 GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), “Jordan's Green Industrial Transition: What Role Can Green Finance Play? A Study on the Potential Demand and Supply of Green Finance in the Industrial Sector,” 2022.

73 Jordan Economic Modernization Vision, Pillar Sustainability Goal 2, <https://www.jordanvision.jo/en/site/sustainability>.

transport sector may struggle to switch their fleet directly to electric vehicles, and they may not receive preferential financing for vehicles that do not fit a narrow definition of “green.” Thus, public authorities in Jordan might consider designing a dedicated program for transition financing, which would include coverage for MSME investment in vehicles that pollute less but are not yet fully electric. Nonbank FIs such as asset financing companies may play an important role here. As highlighted in the 2018–20 National Financial Inclusion Strategy (NFIS), CBJ can use its supervisory powers over the nonbank FI sector to enhance its role in financing small and medium enterprises.<sup>74</sup> A well-designed transition finance program that builds on supply- and demand-side research would contribute to a more inclusive and just transition to a low-carbon economy and can go beyond the transport sector.

### Box 9.1: Green section in the 2022 Financial Inclusion Survey

About 1 percent of adults in the entire sample of the 2022 Financial Inclusion Survey indicated that they borrowed from financial institutions for the purpose of green investment in the past 12 months, which made up about 7 percent of adult borrowers. Most of these people borrowed to finance the purchase of energy-efficient appliances. The results of the survey also showed that 10.5 percent of the official microenterprises, 16.7 percent of small enterprises, and 23.1 percent of medium enterprises have obtained financing for green purposes. Some of the main obstacles on the demand side for green finance in Jordan are the high prices of equipment and the lack of suppliers outside the city of Amman, as well as challenges with administrative procedures for solar energy.

**Microfinance service offerings do not currently tap the full potential of climate-vulnerable populations and could be expanded.** Microfinance institutions (MFIs) currently serve about 6 percent of Jordan’s adult population. Commercial activities in urban areas make up a large part of the current loan portfolio.<sup>75</sup> The NFIS expected MFIs to develop new products and services targeted at rural clients, women, youth, and the agricultural sector.<sup>76</sup> However, the microfinance sector has not yet met these objectives. The International Finance Corporation recommended developing an operational and risk management model for MFIs that suits micro and small enterprise lending and building the capacity of MFIs in new products and services, such as renewable energy.<sup>77</sup> Thus, the MFI sector can seize the opportunity to focus on currently underserved climate-vulnerable populations, especially women in rural areas. It can develop a suite of green inclusive products and services and upgrade its risk management to incorporate climate and environmental risks<sup>78</sup> in ways that will enhance the resilience of the sector and its clients and that would be proportionate to the size and capacity of this segment of the financial sector. Climate issues will be included in a broader MFI sector development framework. Box 9.1 provides a brief overview of selected results from the “green module” of the Financial Inclusion survey conducted by CBJ in 2022.

74 CBJ, “The National Financial Inclusion Strategy [NFIS] 2018–20,” 65.

75 “Tanmeyah Industry Performance Report,” Q3, 2022, <http://tanmeyahjo.com/Portals/0/Tanmeyah%20Q3%202022%20wbsite.pdf?ver=w4C7MAkGwWXYH3tHWXDWWQ%3d%3d>.

76 NFIS 2018–20, 62.

77 IFC, “Microfinance in Jordan: Developments, Challenges, and Future Prospects,” 2020.

78 Natalia Realpe Carrillo and Alexander Reviakin, “Sustainable Finance in the MENA Region: State of Development, Challenges, and Opportunities,” 2022, <https://hedera.online/download/realpe-reviakin-sustainable-finance-mena-2022.pdf>.

**An enabling environment for MFIs' green finance offering in Jordan has yet to be created.** A survey conducted by Hedera and Sanad with six MFIs in Jordan in 2022 indicated that the enabling environment for implementing inclusive green finance in Jordan is still in early stages of development, and constraints such as the lack of partners, regulations, and supporting programs and relatively weak demand were highlighted. Overall, in three dimensions that were covered by the survey—enabling environment, execution, and offering—Jordan's MFI sector was below the average for the Middle East and North Africa region.<sup>79</sup>

**Inclusive green finance for the agricultural sector should focus on smallholder farmers, women, and informal farm laborers.** Although agriculture represents only a small share of the GDP in Jordan, an estimated 15 percent of the labor force, 25 percent of the population under the poverty line, and a significant share of refugees depend on agriculture for their livelihood. Jordan's Green Growth National Action Plan 2021–25 envisions “sector reforms to improve access to finance for small farmers.”<sup>80</sup> Women make up a significant share of the agricultural labor force, but they tend to work as informal or seasonal workers, and only a small minority owns land. They are thus not eligible for agricultural finance programs that require land titles as collateral. To deliver inclusive green finance, CBJ, together with other authorities, including the Agricultural Credit Corporation (ACC) and the Ministry of Agriculture, will consider expanding existing policies and devising new ones to support women and informal agricultural laborers, who are particularly exposed to climate risk. Currently, farmers report receiving advice and training mainly from seed and fertilizer suppliers, with additional support from the Ministry of Agriculture. Public authorities can provide additional and more targeted capacity building that helps smallholder farmers adopt more climate-resilient methods and technologies.<sup>81</sup>

**Digital providers and innovative financial services are important parts of the enabling ecosystem, developing affordable green services for climate-vulnerable sectors.** The regulatory enablers for an inclusive digital financial services system in Jordan are largely in place. However, mobile money uptake is still below the regional and global averages.<sup>82</sup> The agent network is concentrated largely in urban areas,<sup>83</sup> undermining the potential benefits digital payments can provide for climate-vulnerable populations in the countryside. CBJ will consider regulatory measures to encourage digital payment service providers to expand their agent networks and improve their value proposition for rural clients. While CBJ cannot generate demand for such services, by providing an enabling regulatory environment for digital financial services, CBJ can foster market entry, competition, and innovation that will ultimately improve the supply of financial services that can enhance the climate resilience of people and businesses.

**By designing and implementing broader measures to green the financial sector, CBJ will aim to reduce information costs to avoid unintended consequences of green finance policies (table 9.1).** To avoid financial sector retrenchment away from low-margin clients due to increased transaction costs in risk assessment, CBJ will gradually phase in climate-related regulations along with capacity building and will consider making environmental and social due diligence proportional to loan size. Smaller FIs merit particular attention because they may be most capacity constrained and most exposed to physical and transition risks. Moreover, climate-relevant information asymmetries can be addressed, for example, by building a database that makes MSMEs' environmental information

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79 Carrillo and Reviakin, “Sustainable Finance in the MENA Region.”

80 Ministry of Environment, “Agriculture Sector, Growth National Action Plan 2021–2025,” MiniAction Point no. 4, 2020, [https://gggi.org/wp-content/uploads/2020/10/20022\\_Jordan\\_Agriculture\\_v07\\_HL\\_Web.pdf](https://gggi.org/wp-content/uploads/2020/10/20022_Jordan_Agriculture_v07_HL_Web.pdf).

81 Ministry of Environment, Action Point no. 2.

82 CBJ, Financial Inclusion Report 2018–2020.

83 USAID (US Agency for International Development), Digital Finance Country Report Jordan (Washington, DC: USAID, 2019), [https://pdf.usaid.gov/pdf\\_docs/PA00W9T5.pdf](https://pdf.usaid.gov/pdf_docs/PA00W9T5.pdf).



available to potential lenders, including risk exposure and eligibility for green loans. CBJ will explore development of a similar platform in cooperation with other national authorities. Such a database could be leveraged for and interconnected with Jordan’s monitoring, reporting, and verification system, which is used to track climate-responsive investment and reduction in GHG emissions toward achieving Jordan’s nationally determined contributions. A Green Credit Bureau is discussed in chapter 11. Like reporting to prudential authorities, public disclosure requirements by FIs can also be made proportional to loan size, with *de minimis* exemptions. Note that Jordanian FIs have made laudable advances in disclosure for consumer protection purposes. Proportional implementation of climate reporting and disclosure requirements should not lead to backsliding in transparency in consumer protection.

**Table 9.1: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>INCLUSIVE GREEN FINANCE</b>													
<b>Preparation and capacity building</b>													
1.	Integrate topics on inclusive green finance into CBJ's capacity-building program.												
<b>Risk mitigating measures (see chapter 11 for more details)</b>													
2.	"Greening" JLGCC measures (such as, green credit guarantee scheme).												
3.	Promote development of climate-related insurance and disaster risk finance products.												
<b>Reduce information costs</b>													
4.	Contribute to the development and adoption of a National Green Taxonomy.												
5.	Promote the development and operationalizations of a Green Credit Bureau. Explore links with MRV.												
<b>Minimize unintended consequences from climate-related regulations</b>													
6.	Integrate financial inclusion considerations into broader climate-related regulatory and supervisory framework for risk management, governance, disclosure, reporting, and green financing.												
<b>Scaling up affordable green finance</b>													
7.	Integrate financial inclusion measures in designing the Green Loan Framework, Guidelines for Green Finance Products and Services, etc.												
8.	Gradually introduce requirement for FIs to adopt low-carbon transition and adaptation plans.												
9.	Integrate green finance considerations into a new National Financial Inclusion Strategy.												
10.	Promote technology-enabled innovations in green finance.												

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; JLGCC = Jordan Loan Guarantee Corporation; MRV = monitoring, reporting, and verification.





# SUSTAINABLE ISLAMIC FINANCE IN JORDAN

# 10







## 10.1 WHY IS ISLAMIC FINANCE IMPORTANT IN GREENING THE FINANCIAL SECTOR IN JORDAN?

**Islamic finance has great potential in the evolution of Jordan’s financial system.** Currently, Islamic finance forms a material share of Jordan’s financial services industry and has the potential to grow further and contribute to overall socioeconomic and financial stability objectives. As a majority-Muslim nation, Jordan has significant levels of latent demand for Sharia-compliant financial services. This demand is likely to be higher among the vulnerable and more financially excluded.

**Islamic finance involves provision of financial products and services in accordance with Sharia Islamic law, principles, and rules.** The key facets of Islamic finance include but are not limited to risk-sharing, asset basis, real economic basis, preclusion of any uncertainty in a transaction, fair treatment of customers and counterparties, and avoidance of speculation. Parties to a transaction must share the risks and rewards of the transaction, and the transaction should have a real economic purpose without any speculative element. Transactions should not leave any party in a disadvantageous position, such as asymmetry of information, which could lead to exploitation of either party. Islamic banks are funded by current accounts that do not attract interest or by profit-sharing investment accounts in which the account holder receives a return that is determined ex post by the profitability of the banks. On the asset side, Islamic banks use a wide range of Islamic contracts such as sales at a profit margin (Murabahah), lease (Ijarah), profit sharing (Musharakah and Muḍarabah), and fee-based services (for example, Wakalah).

**Initiatives and strategies to develop Islamic finance and exploit the latent demand for it with the aim of contributing to wider socioeconomic objectives, such as financial inclusion, also offer appropriate context and opportunities to further the goals of greening the financial services in Jordan.** Broad alignment of objectives and expected outcomes of Islamic finance and green finance provides the basis for a potentially symbiotic relationship between these two concepts. CBJ will work with the FIs to develop relevant guidance to integrate this part of the financial system into broader greening of the financial sector framework in Jordan. It is important for Islamic FIs to understand, monitor, and manage climate-related risks and leverage opportunities stemming from climate action. Moreover, there is an important digital angle for Islamic finance, which is fueling a resurgence in

Islamic social finance and could also support green Islamic finance. For example, in Malaysia, Islamic fintech has enhanced efficiency and transparency of making donations to zakat, waqf, and sadaqah. This is aligned with the CBJ's objective to promote technology-enabled innovations for green finance, as discussed in chapter 11.

**Note that most of the ongoing international and regional initiatives and standards often refer to sustainable Islamic finance, which entails a climate-related dimension but is a broader concept.** Overall, because fairness, equity, and transparency are fundamental principles of Sharia that underlie Islamic finance, sustainable finance can be a natural extension of Islamic finance. Therefore, this chapter, slightly differently from other chapters of the strategy, refers not only to green, but also to sustainable, finance.

**To comply with Sharia, Islamic financing and investment transactions should be based on a real economic trade or activity and must be backed by defined assets.** For example, Islamic financing for acquisition of equipment must be backed by the equipment, leaving the Islamic bank as its effective owner until the financing is repaid in full. All banking business based on sales or leases must have an underlying asset. This is in contrast to conventional banking, where the asset is important only as collateral security but is not necessarily part of the loan transaction.<sup>84</sup>

**The asset-backed nature of Islamic finance transactions leaves Islamic FIs and investors in Islamic products like sukuk with a much greater degree of asset risk than conventional FIs.** Consequently, any significant driver of asset risk, such as climate change, is likely to have a disproportionately greater adverse impact, for instance, on asset impairment, on cash flows generated by the asset, on the Islamic FI, or on the sukuk investor. This heightened exposure to climate-related risks should motivate Islamic banks and sukuk investors to focus on green assets and on managing the impact of climate risk on their asset portfolios.

**As for conventional finance, the risk-opportunity perspectives of greening the financial sector are relevant for Islamic finance** (figure 10.1). Risks arising from potential adverse effects of climate change on conventional financial assets, such as risk of value impairment, illiquidity, or stranded assets, are equally applicable to assets of Islamic FIs. Materialization of those risks due to climate change could lead to adverse impacts on an individual FI's balance sheet and on financial stability overall. In addition, coupled with the lack of global response, guidance, and leadership, the sector may even risk becoming less competitive than its conventional counterpart. Overall, there is a growing awareness within the Islamic finance space of the potential adverse effects if Islamic FIs do not adequately manage the emerging climate-related, environmental, and social risks.

**There is a growing expectation for Islamic finance to evolve and take on a more progressive role to bridge the financing gap for national commitments under the Paris Agreement to accelerate the transition to a low-carbon and climate-resilient future.** At present, Islamic green finance is estimated to account for a very small share—approximately 1 percent—of the total Islamic finance market of US\$3.06 trillion.<sup>85</sup> Building on the core principle of Sharia mandating fair, just, and equitable commercial transactions, Islamic finance can be an effective avenue for developing and delivering innovative sustainable solutions to help finance Jordan's low-carbon and climate-resilient transition and broader sustainability goals. This approach can simultaneously be useful in achieving the goal of tapping the latent demand for Islamic finance products in Jordan, thereby contributing to other socioeconomic objectives such as financial inclusion.



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84 IMF (International Monetary Fund), "Islamic Finance and the Role of the IMF," February 2017, <https://www.imf.org/external/themes/islamicfinance/>.

85 As at end of 2021. IFSB (Islamic Financial Services Board), "Islamic Financial Services Industry Stability Report 2022: Resilience amid a Resurging Pandemic," Kuala Lumpur, June 2022.

**Globally, there is still a limited supply of green financial instruments, especially for those seeking Sharia-compliant green investment opportunities, including from new sources of Islamic liquidity such as the Hajj funds.** To harness growth, it is thus important to develop the enabling ecosystem and environment for Islamic FIs to engage in climate-responsive business activities and manage climate-related risks more actively. Creating the right environment will be one of the first points that CBJ will focus on. Islamic finance will take an integral part in CBJ’s supervisory guidance and regulations on green financing and integrating climate-related considerations into FIs’ risk management and operational frameworks.

**Figure 10.1: Greening Islamic finance: conceptual entry points**

 Risk dimension	 Opportunity dimension	
<ul style="list-style-type: none"> <li>Climate-related and environmental risks can impair value of Islamic assets, reduce liquidity, and lead to asset stranding.</li> <li>Determine potential impact on individual Islamic financial institutions and financial stability more broadly.</li> </ul>	Value-based finance; symbiotic relationship between Islamic and green finance	Mobilization of diverse Islamic liquidity
	<ul style="list-style-type: none"> <li>Helps address national climate financing gap and deepens financial sector.</li> <li>Taps the latent demand for Islamic finance products in Jordan.</li> <li>The role of Islamic finance in increasing financial inclusion.</li> </ul>	

Source: Original figure for this strategy.

## 10.2 AN OVERVIEW OF THE CURRENT ISLAMIC FINANCE MARKET IN JORDAN

### Islamic banks

**As of January 2023, Jordan had four full-fledged Islamic banks, constituting about 19 percent of Jordan’s total banking assets.** These banks have a total of 207 domestic bank branches (Q1 of 2022) and 534 ATM branches. Islamic banks in Jordan apply the accounting, governance, and Sharia standards issued by the Accounting and Auditing Organization for Islamic FIs (AAOIFI) and the prudential and disclosure standards and principles issued by the Islamic Financial Services Board (IFSB). Jordan is a member of both AAOIFI and IFSB.

**Islamic banking is regulated by CBJ under a common framework with conventional banks.** The banking law includes specific requirements for Sharia governance, and CBJ has issued regulations for corporate governance, capital adequacy, and liquidity. Going forward, CBJ aims to update many of the regulations, including those for capital adequacy and liquidity risk management for Islamic banks, and to supplement them with current and dedicated regulations for Islamic banking relating to pillars II and III of the Basel standards as well as market conduct. CBJ also has a dedicated group to supervise Islamic banks, called Islamic Banks Group, which conducts on-site and off-site supervision. CBJ plans to improve the risk coverage and risk sensitivity of its supervisory approach, to ensure the effective implementation and integration of the risk-based process. These broader initiatives can be leveraged to include green finance strategies for the Islamic finance sector, thereby contributing to multiple objectives.



## Nonbank Islamic FIs

The following are key players in the nonbank Islamic finance segment in Jordan:

- *Takaful (a type of Islamic insurance) companies.* There are two Takaful operators in Jordan providing insurance services based on Islamic principles.
- *Islamic microfinance companies.* There are two Islamic microfinance companies in Jordan serving targeted customers.
- *Islamic capital markets.* Jordan has a sukuk market, though it is limited in terms of capital raised, issuers, investors, and trading volumes. Given the material levels of Sharia-compliant liquidity available in the country with various institutions and government entities like the social security fund and the Hajj fund, there is immense potential for growth in the sukuk market. The need for long-term capital to fund infrastructure investments in Jordan and the availability of unencumbered assets from the government of Jordan and its public entities add to the potential for the sukuk market. However, to fully exploit this potential, a broader strategy for development of Islamic capital markets and standardized structures to ease sukuk issues will be needed.
- *Hajj fund.* Jordan is the second country (after Malaysia) to establish a Hajj fund (box 10.1). It is a fund that people can save in, and the money is put into all types of Sharia-compliant investments. The main purpose of this fund is to increase the savings of participants and to pay for their Hajj pilgrimage. According to the Ministry of Awqaf and Islamic Affairs, the number of depositors to the fund was 59,000 in 2022, with deposits of JD 295 million.
- *Orphans Fund Development Corporation* is a financially and administratively independent corporation that was established under the Orphans Law and invests its financial resources in alignment with Islamic Sharia. In 2022, it managed assets of about JD 250 million.

### Box 10.1: Hajj fund

**The Islamic religion mandates that all Muslims who are financially and physically capable perform a pilgrimage to Mecca—the Hajj—once in their lifetime.** To help fund the pilgrimage, some countries, particularly those with large Muslim populations, have seen their government take on the effort of establishing a national Hajj fund. Malaysia has been a pioneer in establishing a national Hajj fund, which is around US\$20 billion and has 9 million depositors. Typically, Hajj funds follow a model that mobilizes Hajj savings under an Islamic trust or custodian arrangement in which the savings are invested not only in Sharia-compliant financial instruments or projects but also in eligible investments that embed the broader ethical and sustainability considerations while the investment returns would generally reflect the Hajj fund's risk-return profile. The Hajj fund is a specific and significant pool of liquidity in need of Sharia-compliant investment options, which are not yet available in Jordan in adequate range and liquidity. In this context, the Hajj fund can be an important source of liquidity for investment in Sharia-compliant green and/or sustainable economic activities, creating opportunities for Islamic banks to participate (for example, by cofinancing such green projects or investments).

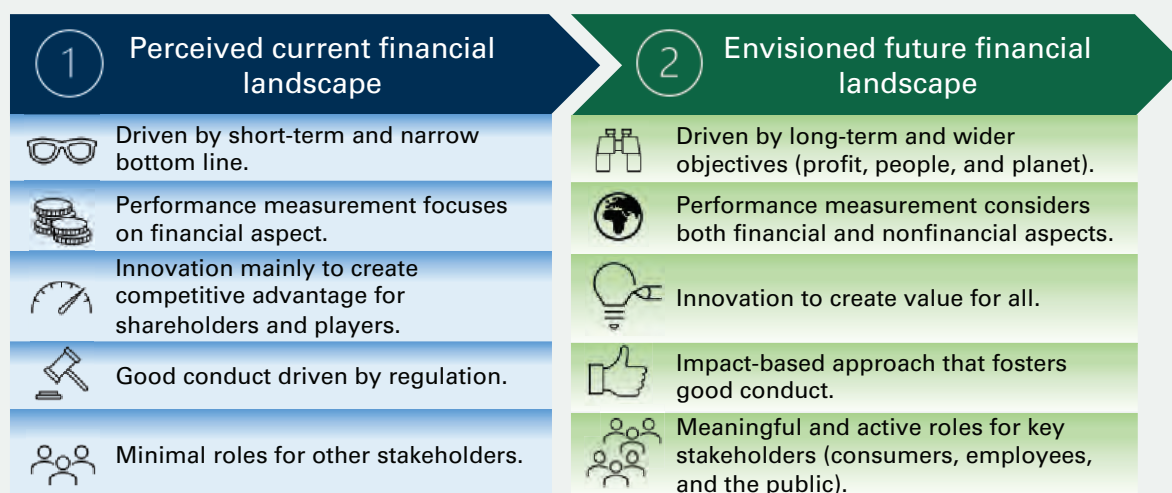
## 10.3 SUSTAINABLE ISLAMIC FINANCE: SELECTED COUNTRY EXAMPLES

**In most Islamic countries, green finance is at a nascent stage.** There are a few countries that have embarked on integrating the broader sustainability considerations (beyond climate-related issues) into their Islamic finance frameworks, often to deal with climate change–related risks and social agendas aligned to sustainable development goals. Many more-mature Islamic markets, in countries such as Malaysia or Indonesia, or in some parts of the Middle East and North Africa region, have been at the forefront in fostering Islamic sustainable finance, but with varying degrees of progress.

### Malaysia’s value-based intermediation framework

Since 2017, Malaysia’s central bank (Bank Negara Malaysia) has been promoting a value-based intermediation (VBI) approach, which uses climate-related and environmental objectives as part of a broader financial intermediation framework (figure 10.2). VBI is a strategy to strengthen the roles and impact of Islamic FIs toward a sustainable financial ecosystem.<sup>86</sup> VBI is defined as a financial intermediation that aims to deliver the intended outcomes of Sharia—attainment and delivery of universal well-being and promotion of the triple bottom-line objectives of profit, people, and planet through practices, conduct, and financial offerings that generate positive and sustainable impacts to the economy, community, and environment, consistent with the shareholders’ sustainable returns and long-term interests. The new paradigm promotes financial intermediation that prioritizes integrating environmental, social, and governance (ESG) factors, promotes entrepreneurship, empowers communities, and builds social resilience.

**Figure 10.2: Malaysia’s Islamic banking value-based intermediation approach**



Source: Processed from Bank Negara Malaysia, “Value-Based Intermediation: Strengthening the Roles and Impact of Islamic Finance,” Strategy Paper, March 12, 2018.

86 KPMG, “Sustainability and VBI Initiatives for Malaysia’s Financial Services Industry,” accessed in March 2023, <https://kpmg.com/my/en/home/industries/financial-services/sustainability-leadership-initiatives-for-malaysia-s-islamic-ban.html>.

**The VBI framework is built on the concept of seizing opportunities and managing risks, including those related to climate and social issues.** For example, it includes a framework for implementation of an impact-based risk management system to assess the financing and investment activities of Islamic FIs in line with their VBI commitments. The VBI assessment framework serves as a reference for FIs intending to incorporate ESG risk considerations into their own risk management system.

**In Malaysia, implementation of the VBI approach to value-driven finance leverages the central bank's current regulatory and supervisory framework.** Thus, VBI is an industry-led framework that is guided by the central bank. VBI activities are largely voluntary, without regulatory interventions and enforcement over VBI implementation. Fifteen Islamic banks in Malaysia have formed the VBI Community of Practitioners to pool their resources and expertise to codify VBI. Beyond that, Malaysia has implemented a number of other incentives and initiatives linked to green finance, such as a sustainable and responsible investment sukuk framework, a green technology financing scheme in which the central bank provides funding with lower interest rates for green projects (this scheme is broader than Islamic finance), green investments tax allowance, and more.

## Bangladesh

**In 2015, the Central Bank of Bangladesh established a Sustainable Finance Department, covering two main areas: green banking and corporate social responsibility.** In 2020, the Sustainable Finance Policy for Banks and FIs was issued.<sup>87</sup> The following are some of the climate-related and environmental initiatives from the Bank of Bangladesh. These initiatives do not specifically target Islamic finance; however, Islamic finance accounts for about 30 percent of the financial sector in Bangladesh.

- To expedite the sustainability and climate change initiatives of banks and other FIs, Bangladesh Bank has set a minimum target of direct sustainable and green finance of total loan disbursement: banks are expected to give out 15 percent of their loans for sustainable financing, including 2 percent for green financing.
- Bangladesh Bank instructed all banks and FIs to establish their own Sustainable Finance Unit and Sustainable Finance Committee.
- A comprehensive list of products and initiatives of green finance for banks and FIs was circulated in September 2017.
- To ensure movement toward sustainability, banks and FIs were instructed to form a Climate Risk Fund having an allocation of at least 10 percent of their Corporate Social Responsibility budget.

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<sup>87</sup> Central Bank of Bangladesh, "Sustainable Finance Policy," 2020, <https://www.bb.org.bd/mediaroom/circulars/gbcd/dec312020sfd05.pdf>.





## Indonesia's Islamic Banking Development Roadmap 2020–2025

The Islamic Banking Development Roadmap 2020–2025 issued by the Financial Services Authority in Indonesia highlights that Islamic banking is expected to become the foremost banking industry in terms of its contribution to sustainable development goals (SDGs). While this high-level plan aims to facilitate the development of the Islamic banking sector in general, harmony between Islamic banking and SDGs is one of the core principles. In 2021, Indonesia established the Center of Excellence in Islamic Finance for SDGs. All these efforts contribute to a broader sustainability agenda, and, for example, in 2018, Indonesia issued a US\$1.25 billion green sukuk, the first instrument of this kind globally.

### 10.4 HIGH-LEVEL COMPARISON: SUSTAINABLE CONVENTIONAL AND ISLAMIC FINANCE

Conceptually, provision of Islamic financial products and services is organized and executed largely by a negative screening approach, which focuses on rules to ensure that all aspects of the business operations of an Islamic financial institution are Sharia compliant. To date, the evolution of the sector has relied to a great extent on developing Sharia-compliant replicas of conventional financial products, which has not served well in building trust among target clients to crystallize the latent demand for Islamic finance products. Core principles and strategies for green Islamic finance should leverage the “maqasid-al-shariah,” one of the primary objectives of Islamic law, predicated on promoting the principle of “maslahah” (public interest) in two major aspects: attainment of benefits (similar to the opportunity dimension in conventional green finance) and avoidance of harm (similar to the risk dimension in conventional green finance). Table 10.1 highlights some of the salient specificities of *sustainable* Islamic finance in comparison to general characteristics of greening the financial sector and the broader concept of sustainable finance.

**Table 10.1: Some high-level differences between conventional sustainable finance and sustainable Islamic finance**

Conventional sustainable finance	Sustainable Islamic finance
<b>Definition and scope</b>	
<ul style="list-style-type: none"> <li>■ By and large, financing and investment decisions take into consideration environmental, social and governance factors.</li> <li>■ Sustainability is generally defined and understood as meeting peoples' needs today without compromising the ability of future generations to meet their own needs. In business or policy contexts, sustainability seeks to prevent the depletion of natural or physical resources so that they will remain available for the long term.</li> </ul>	<ul style="list-style-type: none"> <li>■ Calls for reorienting finance to deliver the following three objectives that generate positive and sustainable impacts in the economy, community, and environment: (a) the maqasid-al-shariah (higher objective of Sharia), which is to attain benefits and avoid harm; (b) the ultimate objective of Sharia, which is universal well-being; and (c) establishing mizan, or balance upon which the earth and universe are created.</li> <li>■ Islamic sustainable finance, including green finance, is built from the perspective of Islamic law (Sharia) and aligns with the higher objective of Islamic law (maqasid-al-shariah) to enable integration of broader sustainability considerations in financing activities, that is, environmental and social objectives and practice of good governance. The approach is described as positive screening, representing the broader Sharia-based sustainability practices.</li> </ul>
<b>Governance</b>	
<p>Principle 5 of the UN Principles for Sustainable Banking calls for effective governance and a culture of responsible banking within the FIs. FIs are encouraged to set up internal governance and processes that allow them to effectively identify and manage climate- and sustainability-related risks and seize the opportunities. International standards such as BCBS Principles for Effective Management and Supervision of climate-related financial risks has governance as one of the core focus areas.</p>	<p>Islamic banks can embed Sharia-based sustainability principles and objectives in the governance processes to deal with risks and opportunities. For example, Islamic banks are encouraged to practice self-governance through a culture of self-discipline within their operations and practices in line with the principle of ihsan (righteousness), with a view to promoting greater accountability and integrity. Overall, there is significant overlap with general good governance principles when it comes to integrating climate-related and sustainability considerations into conventional and Islamic FIs' business activities.</p>
<b>Classification of green financing activities</b>	
<p>Assessment of green financing is anchored in a green or sustainable finance taxonomy. These considerations are also built into the bank's credit risk management system, thereby facilitating an impact-based financing decisions.</p>	<p>Green financing activities should focus on a positive screening process that integrates the broader Sharia-based sustainability considerations. Existing sustainable Islamic finance frameworks and principles provide concrete examples of positive screening activities (for example, the General Council for Islamic Banks and Financial Institutions Sustainability Guide).</p>

Source: International Association of Insurance Supervisors.

Note: BCBS = Basel Committee on Banking Supervision; FIs = financial institutions; UN = United Nations.

## 10.5 GREENING ISLAMIC FINANCE IN JORDAN

**Greening Islamic finance in Jordan offers compelling value.** Increasing the climate responsiveness (and implementing broader sustainability practices) of Islamic finance would not only take advantage of the significant population in Jordan seeking Sharia-compliant investment options, to contribute to Jordan's green economy objectives, but would also strengthen the resilience of Islamic FIs to climate shocks. Greening Islamic finance efforts could also spark new green investments from institutions, such as Jordan's Hajj fund, which may not participate otherwise. International standards and guidance for greening Islamic finance are relatively less developed than those for conventional finance. The existing frameworks provide quite high-level principles, and it is important to adjust them to effectively align with the local Islamic finance and regulatory environments.

**CBJ will lead the development of the national Framework for Sharia-Compliant Sustainable Finance.** Such a framework will help appropriately integrate Islamic finance specificities into a broader framework for greening the financial sector. The proposed Framework for Sharia-Compliant Sustainable Finance would encompass banks, takaful operators, microfinance institutions, and Islamic capital markets and would address, among other topics, definition of key sustainable and green finance concepts, products, services, and processes compliant with Sharia; fatwas outlining standard Sharia opinions for various sustainable and green finance structures or products to minimize divergence and preclude a resultant loss of trust; and guiding principles for Islamic sustainable finance development in Jordan. In this effort, CBJ will take a co-leading role with other national stakeholders such as the Jordan Securities Commission (JSC).

**Following the practice applied in other countries, financial sector participants will be directly involved, including Sharia supervisory boards of Islamic banks.** These stakeholders need to be coordinated through the Sustainable Islamic Finance Development Working Group, which the CBJ can initiate. Since the development of the framework requires further engagements, this strategy provides the key entry points and discusses main areas that will be elaborated in the framework.

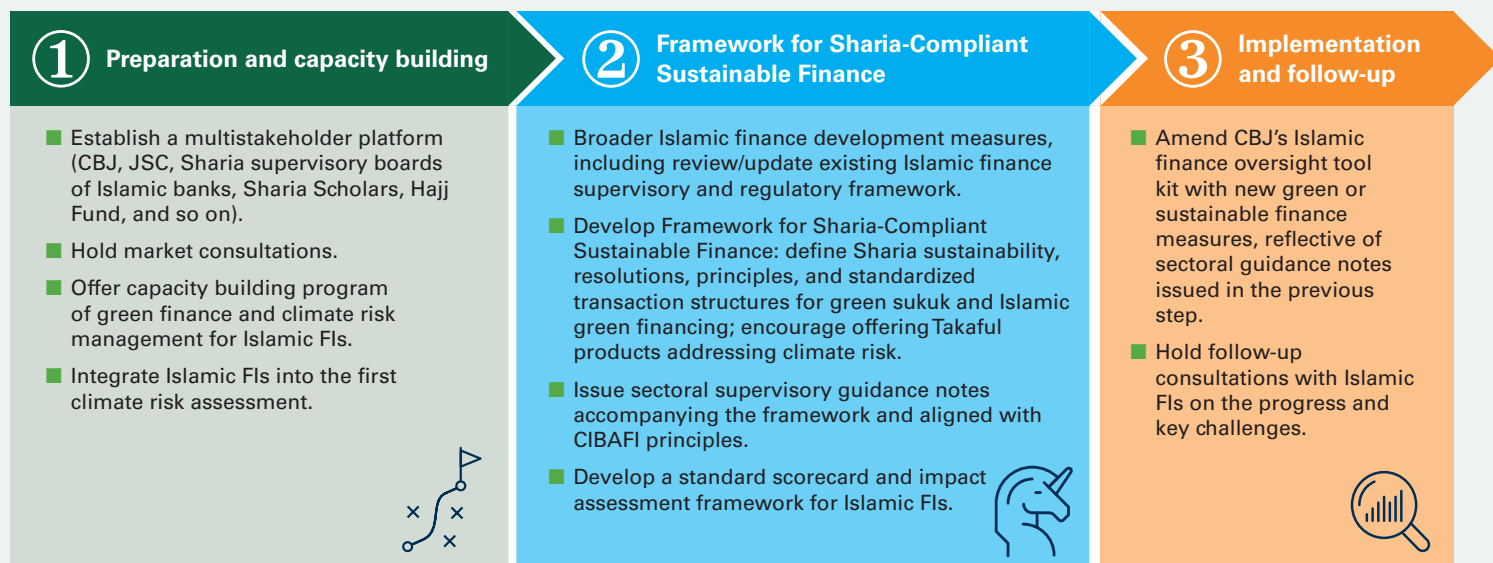
**Green sukuk programs hold significant potential for contributing to growth of green financing in Jordan.** Given material levels of liquidity in need of Sharia-compliant investment options and potential for growth of the sukuk market in Jordan (as indicated above), any strategy to leverage Islamic finance to promote green financing should also include development of green sukuk programs. Key factors to be addressed include but are not limited to the following: (a) well-defined guidelines and eligibility criteria for green sukuk, issued by JSC; (b) a concerted effort to identify infrastructure assets contributing to greening of the economy or a sustainable economy, which can be used as the asset in a sukuk; (c) fatwas from the Sharia supervisory commission of JSC to set out acceptable Sharia aspects for structuring sukuk, which would provide clarity, reduce uncertainty, and promote consistency in the Jordanian sukuk market; and (d) development of standardized sukuk structures with the relevant aspects detailed in items a to c above.

**Note that quite a few conceptual milestones for greening the conventional financial sector in Jordan will apply (with slight adjustments) to Islamic FIs.** Climate-related principles in areas such as governance, management of climate-related risks, and disclosure can be applied across the board for both conventional and Islamic green finance. CBJ plans to develop and implement a dedicated risk-based supervision framework for Islamic FIs, which will comprise oversight of specific aspects of their business relating to Sharia-compliant green financing. CBJ will also work on enhancing the regulatory framework for Islamic banks and takaful operators by including specific guidelines on management of climate-related risks and on green financing. Such guidelines will clarify the regulatory expectations of CBJ and help the Islamic FIs to develop products and grow their sustainable financing activities.



**Greening Islamic finance in Jordan will be built around the following three phases:** (a) capacity building (both CBJ and Islamic FIs); (b) development and adoption of the Framework for Sharia-Compliant Sustainable Finance, which will be preceded by CBJ's efforts to enhance a broader Islamic finance development framework in Jordan. Islamic finance will be reflected in all of CBJ's supervisory guidance measures on governance, risk management, and such; and (c) implementation of the Framework for Sharia-Compliant Sustainable Finance and follow-up actions (figure 10.3).

**Figure 10.3: Milestones in the green Islamic finance area**



Source: Original figure for this strategy.

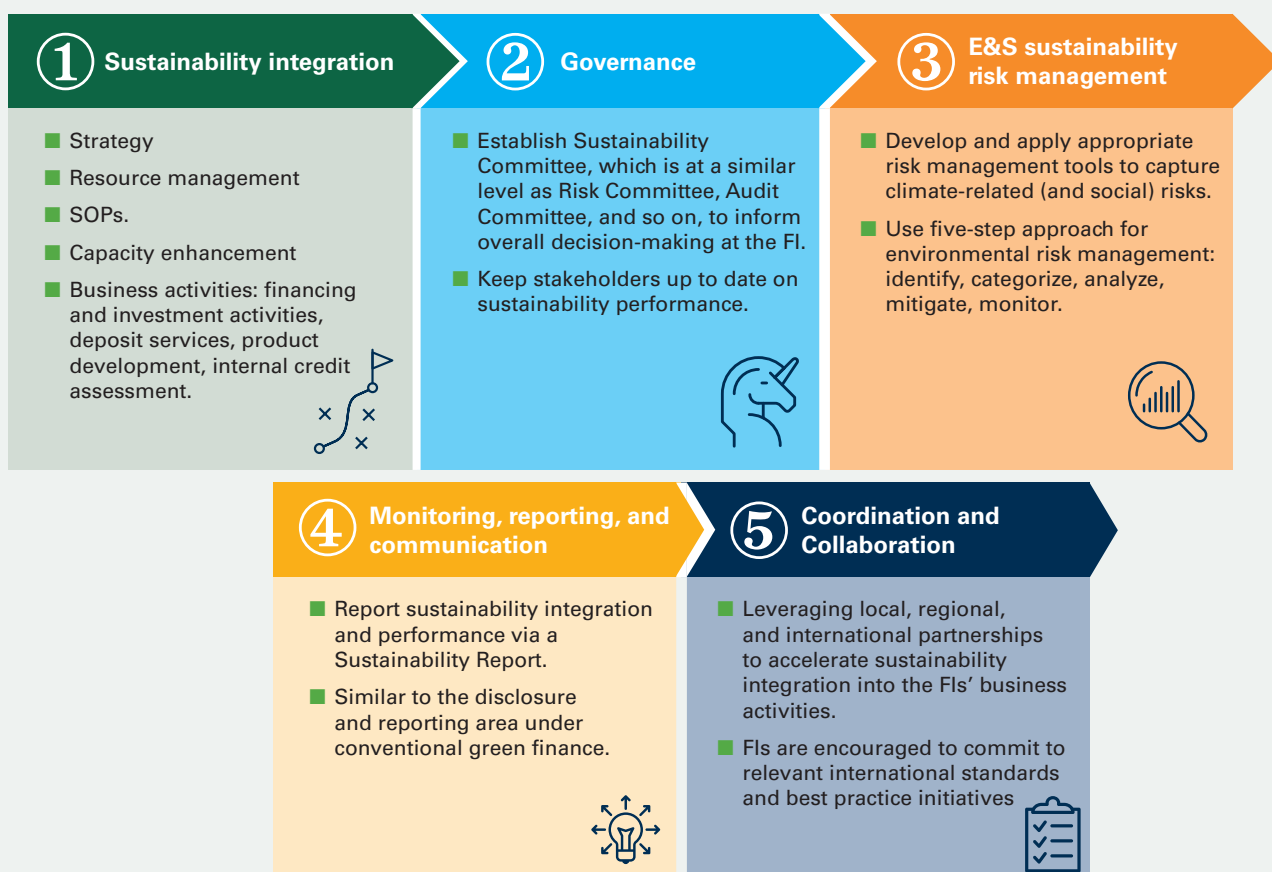
Note: CBJ = Central Bank of Jordan; CIBAFI = General Council for Islamic Banks and FIs; FIs = financial institutions; JSC = Jordan Securities Commission.

**In May 2022, the General Council for Islamic Banks and FIs (CIBAFI) issued a Sustainability Guide for Islamic FIs.** This guide can be treated partly as an analogy to the Basel Committee on Banking Supervision (BCBS) climate-related principles for conventional green finance, except that the CIBAFI guide focuses on a broader concept of sustainability that goes beyond green finance. The CIBAFI guide is built on five principles of sustainability: (a) sustainability integration in business activities; (b) sustainability governance; (c) environmental and social sustainability risk management; (d) monitoring, reporting, and communication; and (e) coordination and collaboration.

**CIBAFI notes that while its guide is intended to be used mostly by Islamic banks, the principles may be applicable, with some modifications, to other segments of the Islamic financial services industry,** such as Islamic capital markets, takaful, and Islamic social finance institutions. Also, the CIBAFI guide makes only limited reference to procedures for sustainability integration in deposit services, product development, and some other services, but CIBAFI continues to work on these areas and the guide can be adjusted in the future to reflect market developments.

**To make it easier for the Islamic FIs to navigate the green finance journey, CBJ will gradually issue sectoral supervisory guidance aligned with CIBAFI principles.** In addition, CBJ will engage Islamic FIs to develop standard scorecards and impact assessment frameworks that Islamic FIs could use in assessing and reporting their performance in the sustainable and green finance area. Following the Framework for Sharia-Compliant Sustainable Finance, Islamic FIs will be expected to incorporate Sharia-based sustainability and climate-related principles and objectives in their institutional strategies, risk management, and business activities. This integration will have to be aligned to organizational values and vision. One of the CIBAFI requirements is for Islamic FIs to establish a separate internal sustainability committee, which would inform the overall decision-making and would lead sustainability-related processes and engagements within an institution. This is like CBJ's expected requirement for conventional FIs to establish dedicated teams (or integrate these responsibilities within the functions of existing staff) for sustainable and green finance and climate risk management. One of the areas that will require further analysis and capacity building is development of innovative sustainable and green Islamic financial products, which will require the positive screening approach. Figure 10.4 provides a concise overview of the five principles from the CIBAFI guide that CBJ will follow in greening the Islamic finance area.

**Figure 10.4: Five building blocks of the CIBAFI guide**



Source: Adapted from CIBAFI, "Sustainability Guide for Islamic Financial Institutions (IFIs)," March 2022.

Note: E&S = environmental and social; FIs = financial institutions; SOPs = standard operating procedures.

## Principle 1: Sustainability integration

The core area under this principle is mainstreaming sustainability considerations into FIs' overall business activities. It has a few key points:

- **STRATEGY.** Islamic FIs are encouraged to incorporate sustainability objectives into their strategic planning process, strategy, and vision and should develop strategy for dealing with sustainability issues. This requires active engagement from the highest-level management. The CIBAFI guide indicates the need to set measurable key performance indicators that would help FIs monitor and improve their performance on sustainability targets.
- **RESOURCE MANAGEMENT.** FIs should closely monitor and mitigate their environmental footprint by increasing resource use efficiency, implementing circular-economy principles, and so forth.
- **STANDARD OPERATING PROCEDURES (SOPs)** should clearly outline the scope and plans for integration, implementation, and assessment of sustainability objectives. The SOPs should apply to all processes and staff of the FI and should periodically be reviewed as part of the internal auditing process.
- **CAPACITY ENHANCEMENT.** FIs are expected to establish dedicated sustainability teams and to implement targeted capacity-building programs to enable FIs and their staff to effectively mainstream sustainability considerations into the business activities, decision-making, and more. An important stakeholder in this process is the Sharia supervisory board or Sharia committee. There should be clearly assigned roles and responsibilities along the sustainability integration process.
- **BUSINESS ACTIVITIES.** FIs are encouraged to prioritize business activities that have positive environmental and social impacts, such as productive sustainable business financing, sustainable energy infrastructure, clean transportation, green and social credit (Qard al-Hasan) lines, and water and waste management. Business activities that support achievement of national sustainable development plans and strategies should be integrated into the FIs' focus areas. Integration of sustainability in financing and investment activities consists of integrating nonfinancial considerations, such as environmental and social impacts, alongside the common economic considerations. As part of the product development strategy, FIs should develop new products or enhance existing products that positively influence the environment and society and align with their corporate mission and values. FIs should clearly communicate their investment approach to their depositors (in the case of banks) by detailing the sustainability criteria that are considered in their investment strategy, beyond negative screening based on Sharia compliance. Traditional credit assessment criteria should be revisited to integrate environmental and social sustainability criteria in addition to the economic sustainability criteria.



## Principle 2: Sustainability governance

**CIBAFI principle 2 encourages FIs to establish a sustainability committee, which would be at the same level as, for example, a risk management committee or a credit committee.** So far, Islamic banks have tried to fulfill the requirements of Islamic logic by incorporating Sharia governance into their corporate governance. However, Sharia committees and supervisory boards are generally focused on transaction-based negative screening. A more proactive role may be needed. The sustainability committee would independently assess the sustainability-related consequences of projects, financing solutions, and products. The Sharia committee or supervisory board should be trained to consider sustainable development consequences through the input provided by the sustainability committee. The committee would have a variety of responsibilities, such as developing innovative sustainability-linked products; establishing necessary sustainable development-related risk management processes, including environmental and social risk management; and structuring communication channels with internal and external stakeholders related to sustainability issues.




## Principle 3: Environmental and social sustainability risk management

**Like BCBS climate-related principles, developing and applying appropriate risk management tools to capture climate-related (and social) risks play an important role under CIBAFI principles.** Principle 3 presents a five-step approach that FIs should follow in the environmental sustainability risk management process: (a) identification of material environmental risks at both customer and portfolio levels, (b) categorization of different exposures and sectors according to their level of environmental risk, (c) analyzing environmental risks as part of credit assessment, and (d) mitigation and (e) monitoring of environmental risk exposures on an ongoing basis, using quantitative and qualitative indicators. On the social sustainability side, the CIBAFI guide refers to the following three areas: poverty and economic empowerment, social empowerment and human rights, and advancement of knowledge and art. The guide presents examples of concrete social targets and corresponding risk management requirements. CBJ will coordinate the fundamental principles, targets, and requirements under climate-related financial risk management for both Islamic and conventional FIs.

## Principle 4: Monitoring, reporting, and communication

**Under principle 4, FIs are encouraged to report their sustainability integration via a sustainability report.** To a large extent, this principle is similar to the disclosure and reporting area under conventional green finance. One of the important points from this principle is the expectation that FIs should develop sustainability impact assessment criteria for their financing activities and scorecards incorporating qualitative and quantitative criteria to measure the economic, social, and environmental impacts of their business activities. It is also vital that FIs communicate their sustainability policies and requirements to relevant stakeholders, including clients, investors, regulatory authorities, Sharia committees and supervisory boards, rating agencies, suppliers, and others. Figure 10.5 provides some examples for sustainability disclosure.

**Figure 10.5: Examples of sustainability disclosure under CIBAFI principle 4**

 <b>Governance</b>	 <b>Strategy</b>	 <b>Risk management</b>	 <b>Metrics and targets</b>
<p>Disclose the organization's governance around climate-related risks and opportunities</p>	<p>Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.</p>	<p>Disclose how the organization identifies, assesses, and manages climate-related risks.</p>	<p>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p>
<ul style="list-style-type: none"> <li>■ Describe the board's oversight of climate-related risks and opportunities.</li> <li>■ Describe management's role in assessing and managing climate-related risks and opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</li> <li>■ Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.</li> <li>■ Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</li> </ul>	<ul style="list-style-type: none"> <li>■ Describe the organization's processes for identifying and assessing climate-related risks.</li> <li>■ Describe the organization's processes for managing climate-related risks.</li> <li>■ Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</li> </ul>	<ul style="list-style-type: none"> <li>■ Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</li> <li>■ Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks.</li> <li>■ Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</li> </ul>

Source: Adapted from the CIBAFI guide.

Note: CIBAFI = General Council for Islamic Banks and FIs; GHG = greenhouse gas.

## Principle 5: Coordination and collaboration

**Principle 5 highlights the importance of leveraging local, regional, and international partnerships to accelerate sustainability integration into the FIs' business activities.** This is critical, since mainstreaming sustainable finance into FIs' operating models is overall relatively new, for Islamic finance as well. Therefore, Islamic FIs are encouraged to commit to relevant international standards and best practice initiatives; collaborate with other Islamic FIs locally, regionally, and internationally; contribute to stakeholder engagement and dialogue on sustainability-related issues and initiatives; and so on.

**Table 10.2: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>SUSTAINABLE ISLAMIC FINANCE</b>													
<b>Preparation and capacity building</b>													
1.	Establish a multistakeholder working group for the development of the Framework for Sharia-Compliant Sustainable Finance that includes CBJ, JSC, high-level representatives of Islamic financial institutions including their Sharia board members, Sharia scholars, the Hajj fund, and so on.												
2.	Conduct a market dialogue and baseline assessment of Islamic financial institutions to identify their readiness to integrate sustainability and green finance considerations into their business activities, risk management frameworks, governance, and so on.												
3.	Implement capacity-building activities focused on green and sustainable Islamic finance as part of CBJ's capacity-building program.												
4.	Islamic FIs are integrated into the first climate risk assessment for Jordan's financial sector.												
<b>Framework for Sharia-Compliant Sustainable Finance</b>													
5.	Address the broader Islamic finance development preconditions in Jordan.												
6.	Working group develops (in a consultative manner) and adopts the Framework for Sharia-Compliant Sustainable Finance in Jordan. The framework entails definitions, objectives, principles guiding the sustainable Islamic finance development in Jordan, standardized transaction structures for green sukuk, Islamic green financing, takaful products addressing climate risk, and so on.												
7.	Based on the Framework for Sharia-Compliant Sustainable Finance, CBJ issues sectoral supervisory guidance and/or regulations, covering areas such as governance, strategy, risk management, disclosure and reporting, green finance products and services, and so on. Islamic finance supervisory guidance and regulations align with the respective climate-related guidance and regulations for conventional finance (see chapters 6-9 and 11).												
8.	CBJ, the working group, and Islamic FIs develop a standard scorecard and impact assessment framework to be used by Islamic FIs to report their progress with integrating green and sustainable finance in their business activities. Consider expanding the framework to be used by all FIs, beyond Islamic finance.												
<b>Implementation and follow-up</b>													
9.	Implement the Framework for Sharia-Compliant Sustainable Finance and related supervisory guidance and regulations.												
10.	Conduct follow-up consultations with market participants on their progress and key challenges.												

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; FIs = Financial institutions; JSC = Jordan Securities Commission.











# FACILITATING GREEN FINANCE MOBILIZATION IN JORDAN'S FINANCIAL SECTOR





# INTRODUCTION

**In addition to maintaining financial and monetary stability and enforcing the safety of individual FIs against the backdrop of climate-related risks, financial regulators and central banks can also play a catalytic role in facilitating green finance mobilization.** CBJ's core mandate in the financial sector centers on financial stability, prudential regulation, and supervision. This means that integration of climate-related financial risks into a broader prudential toolkit will help CBJ to fulfill its core mandate. Green finance is complementary to climate risk management efforts under the prudential mandate (the concept of "double materiality"): financing climate-responsive investment, which may appear to be more sustainable and less risky in the longer term, would lead to enhanced financial stability and the increased safety of individual FIs. However, mobilizing green finance requires national-level cooperation between different authorities, and CBJ stands ready to play a leading role. A vibrant green finance market requires implementing measures on both the demand and supply sides. Green finance demand-side measures go beyond CBJ's mandate and will also depend on the government of Jordan's broader policy framework for low-carbon transition and climate-change adaptation. There are several entry points for CBJ to facilitate the green finance supply side.

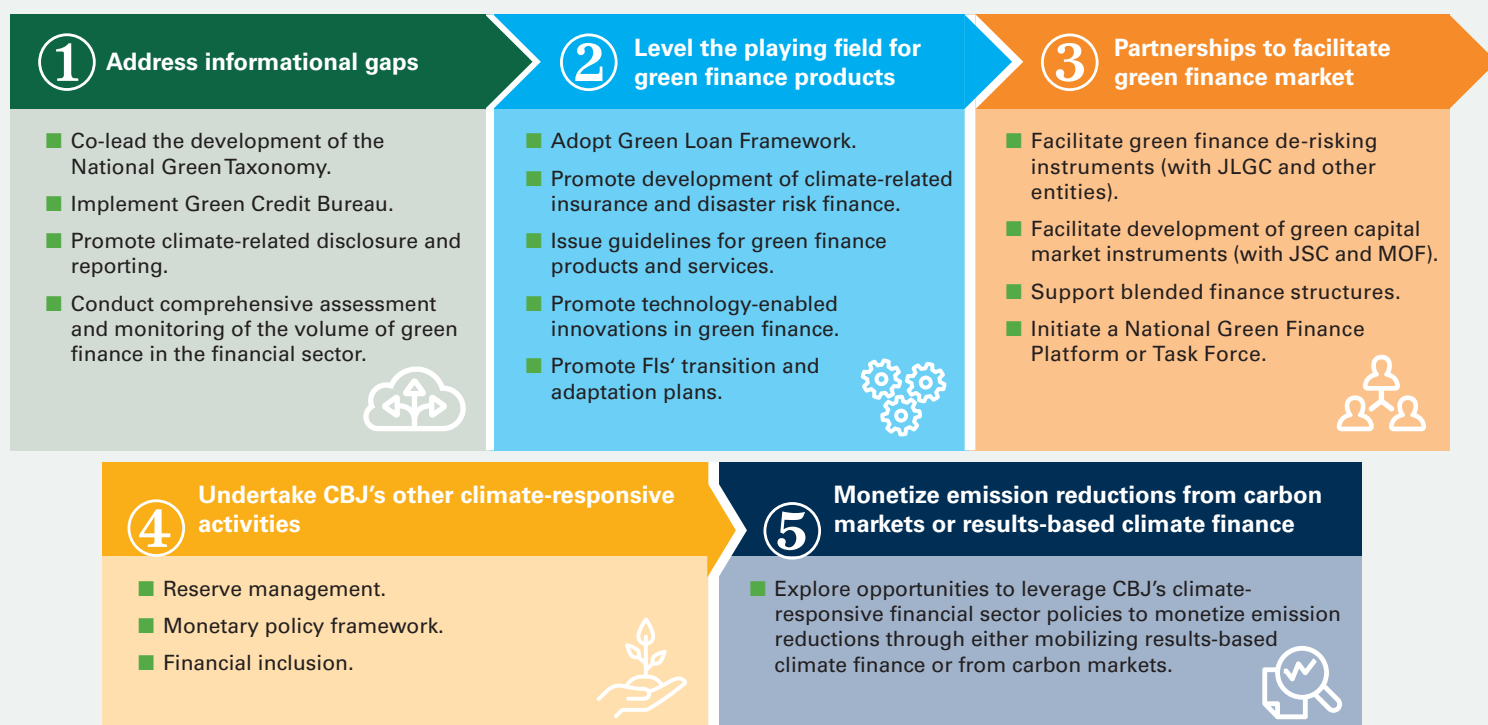
**Several barriers hinder the expansion of the green finance market,** and they are not unique to Jordan. CBJ will be able to address at least some of these barriers by implementing this strategy. These barriers include the following:

- Green finance is a relatively new asset class for FIs, and the evidence of "risk differentials" ("green assets" are less risky than others) is still emerging.
- Assessing climate-responsive projects may require additional technical capacity and different approaches compared to conventional financing.
- Informational and data-related gaps are still significant in many countries, including Jordan.
- Upfront costs of green projects that may pay back only in the medium and longer term.
- Real or perceived perceptions that green investments have higher cost or lower return than "other" investments.
- The future is uncertain about low-carbon transition policies.

**CBJ's agenda in developing a green finance market is built around the following five pillars:** (a) address informational gaps (co-leading the development a national green taxonomy and promote development of a Green Credit Bureau, potentially linked to an MRV system and potentially integrated into or built on the existing credit bureau); (b) level the playing field for FIs to develop green financial products and services (CBJ will adopt the Green Loan Framework; issue guidelines on green finance products and services, including for Islamic green finance offerings; and promote the development of climate-responsive insurance products); (c) foster partnerships to facilitate development of the green finance market, working with other national stakeholders (de-risking mechanisms, green capital market development, and blended finance structures); (d) integrate climate-related considerations into CBJ's other core institutional activities and mandates (portfolio management, financial inclusion, and monetary policy); and (e) monetize emission reductions from carbon finance or results-based climate finance (figure 11.1).

**Given the high importance of the adaptation agenda for Jordan, particular attention should be given to facilitating and expanding adaptation financing.** So far, the majority of the adaptation financing globally has come from the public sector, and going forward, it will be crucial to mobilize the private sector for increased adaptation investments. The same imperative is highly relevant for Jordan. Increasing adaptation investments requires implementing demand side measures, including raising awareness about potential returns and benefits from adaptation investments. Once private sector demand grows, FIs can play an increasing role in financing these investments. One of the entry points for CBJ to facilitate the financial sector preparatory work is to encourage and require FIs to develop both the transition and adaptation plans, which would include a strategic perspective on transition and adaptation financing in the short, medium, and long term. In addition, it will be important for Jordan to leverage international adaptation financing programs, and CBJ stands ready to consider its role in this area. Improving the adaptation financing flows can also be linked to the ongoing work on developing the MRV of adaptation activities in Jordan.

**Figure 11.1: Five Pillars of CBJ’s Engagement in Facilitating Green Finance Mobilization**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; FI = financial institution; JLGC = Jordan Loan Guarantee Corporation; JSC = Jordan Securities Commission; MOF = Ministry of Finance.

## 11.1 ADDRESSING INFORMATION GAPS

**Information that is necessary to verify greenness can generate additional costs to both the borrower and the FIs providing green financing.** This can be particularly important for SMEs and borrowers with lower technical and financial capacity, limiting their ability to justify the green credentials. Minimizing or eliminating this cost through addressing informational gaps could contribute to increased growth of the green finance market and stimulate both the supply and demand side.

### Objective: Contribute to the development of a national green taxonomy

#### WHAT IS A GREEN TAXONOMY AND WHY IT IS IMPORTANT FOR GREENING THE FINANCIAL SECTOR?

**A green taxonomy is a classification system for identifying activities or investments that will move a country toward meeting specific targets related to climate-related and environmental objectives.**<sup>88</sup> According to the Network for Greening the Financial System (NGFS), most central banks and financial supervisors are either using or considering the use of taxonomies.<sup>89</sup> In the absence of formally agreed-upon definitions, market actors tend to introduce their own, which can lead to inconsistencies and higher transaction costs in the market if these individual taxonomies diverge.

**A green taxonomy is a critical component in the framework for greening the financial sector. It can help improve market transparency and discipline and preserve financial stability by doing the following:**

- Reducing “greenwashing” risk (the risk of unsubstantiated and misleading signals of environmental and climate-related benefits) through the use of standardized criteria and definitions of green finance. The existence of a green taxonomy alone will not prevent greenwashing, but it will make detecting and preventing it easier.
- Providing a common language to classify, identify, and evaluate economic activities and assets that substantially contribute to achieving environmental goals in compliance with a country’s national priorities and international commitments.
- Facilitating the differentiation and classification of financial instruments—loans, credit, leasing portfolios, bonds, securities derived from securitization processes, investment funds, investment portfolios, and stock market indices—designated as green from others not designated as green.
- Supporting the monitoring and tracking of green investments and public spending, as well as identifying underserved areas that may require policy support.

**A green taxonomy can help CBJ promote market transparency; actively support the transition to a low-carbon economy;** manage climate-related transition risks by encouraging the alignment of lending and investment portfolios with public policy climate objectives; develop incentives for the improved risk management by FIs; and help identify green assets for CBJ’s own investment portfolio management purposes.

88 International Capital Market Association (ICMA), Sustainable Finance. [www.icmagroup.org/sustainable-finance/](http://www.icmagroup.org/sustainable-finance/).

89 Network for Greening the Financial System (NGFS), “A Status Report on Financial Institutions’ Experiences from Working with Green, Non Green, and Brown Financial Assets and a Potential Risk Differential” (NGFV Technical Document, NGFS, 2020).



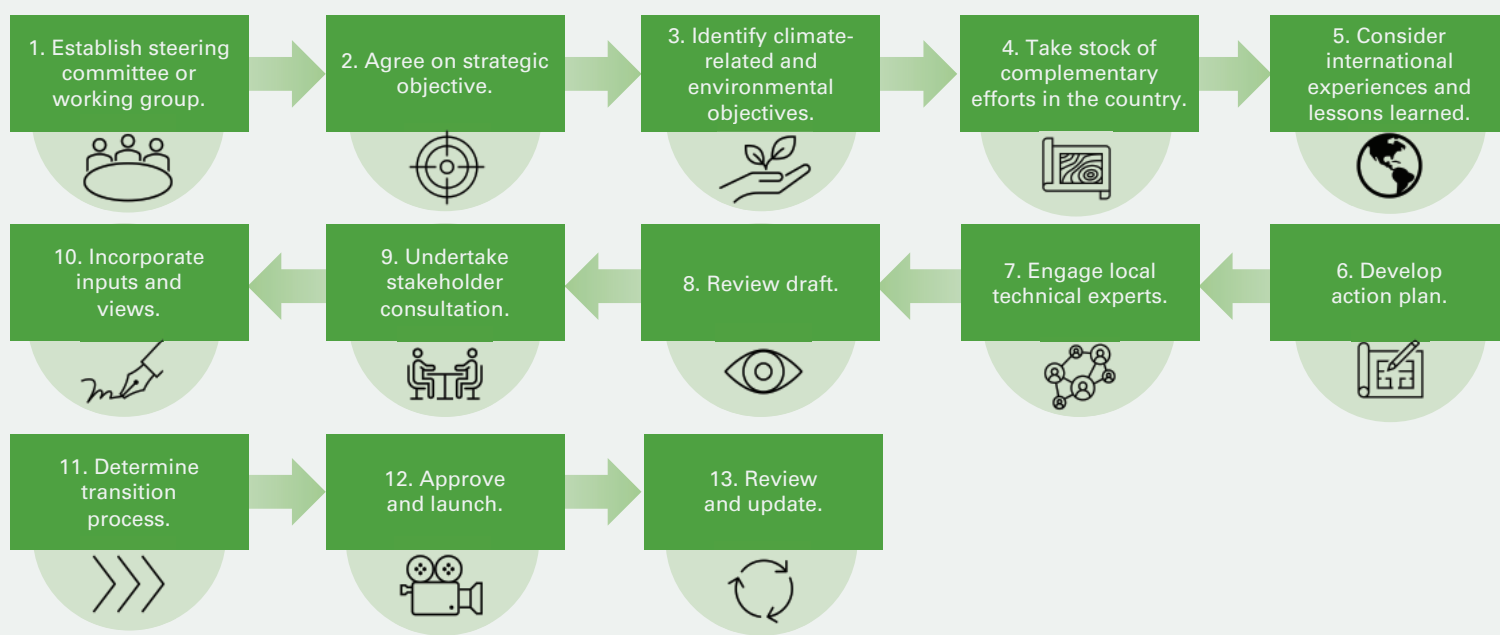
## PREPARATION OF A NATIONAL GREEN TAXONOMY

**The development of a national green taxonomy is a multistakeholder effort, and CBJ is ready to take a leading role with other national authorities.** A green taxonomy is a comprehensive public policy instrument requiring inputs from and alignment among different national authorities and the private sector, underpinning areas such as finance, environment, infrastructure, and energy. A multistakeholder approach enables consistency between the taxonomy and national priorities under the NDC and other national climate change policies.

**From a governance point of view, CBJ will work with other authorities (such as the Ministry of Environment) to establish a national steering committee or working group consisting of key stakeholders and local technical specialists to draft a taxonomy (figure 11.2).** Following international good practice, a national green taxonomy should be developed jointly by the financial sector regulatory authorities in close coordination with the national authorities responsible for defining the country's sustainable development agenda and authorities responsible for supporting and promoting environmental protection and climate action. The taxonomy must be developed cooperatively and incorporate feedback from FIs and private sector representatives, including industrial corporates and SMEs, to ensure that the taxonomy is a practical and usable policy tool for enhancing green finance mobilization in Jordan.

**The composition of a steering committee (or a working group) for the development of Jordan's national green taxonomy could include the following:** (a) Central Bank of Jordan; (b) Jordan Securities Commission; (c) Ministry of Finance; (d) Ministry of Environment; (e) Ministry of Planning and International Cooperation; (f) stock exchanges; (g) representatives of the National Climate Change Committee; (h) other ministries and government departments or entities in charge of setting the national climate change and sustainable development agenda; and (i) financial and private sector representatives.

**Figure 11.2: Steps to Develop a National Green Taxonomy**



Source: Farah Imrana Hussain, Laura E. Tlaiye, and Rolando Marcelo Jordan Arce, "Developing a National Green Taxonomy" (World Bank guide, World Bank, Washington, DC, 2020).

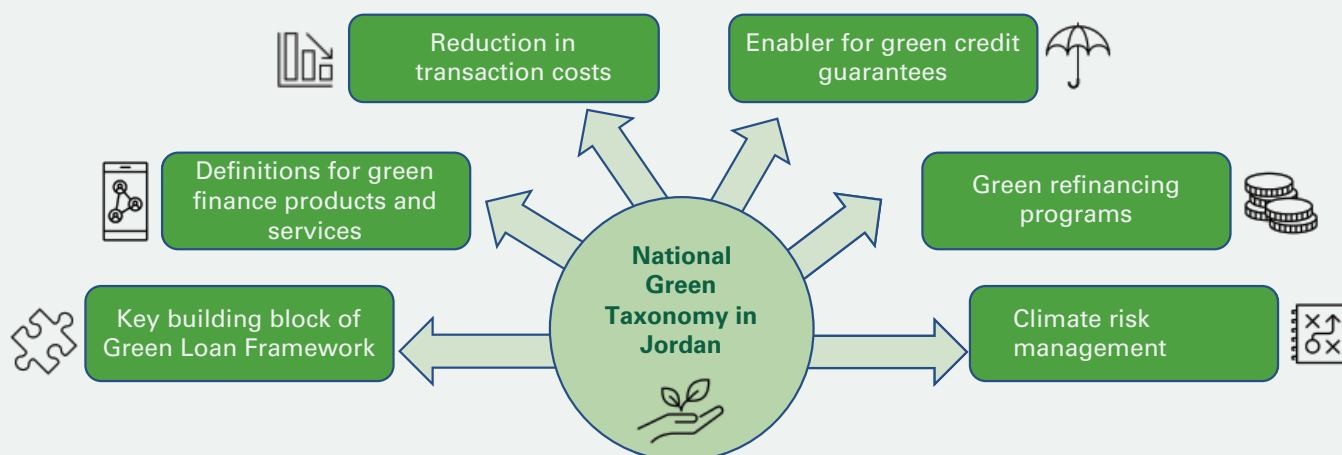
## GREEN TAXONOMY AND CLIMATE FINANCE MOBILIZATION

**Supporting policies and regulations need to be in place for the taxonomy to succeed in catalyzing climate-responsive investment.** Because of this, the taxonomy needs to be linked to green finance initiatives and policies—for example, fiscal incentives, green refinancing facilities, and green credit guarantees. The development of a national green taxonomy in Jordan could build on the instructions issued by the Ministry of Environment (MOENV) under the Climate Change Bylaw 2019, which provides a principles-based definition of climate-responsive investment. The taxonomy would provide a more detailed classification and would expand these instructions. Also, the development and adoption of a national green taxonomy is one of the result indicators in the World Bank financed project, “Jordan Inclusive, Transparent and Climate Responsive Investments Program for Results.”<sup>90</sup> For examples of green taxonomies, see box 11.1.

**Links between green taxonomy and green finance mobilization in Jordan include the following (figure 11.3):**

- A national green taxonomy can reduce green finance transaction costs as it saves time and resources in defining and identifying what can be eligible for green finance.
- A national green taxonomy is critical for defining eligible activities, the related use of proceeds, and the green requisites of green finance products through science-based screening criteria. A green taxonomy will be one of the foundational building blocks for the green loan framework, as discussed in the following sections: it will serve as a basis for classifying and defining green loans.
- The green taxonomy is one of the key enablers for green credit guarantee products.
- The green taxonomy will be used to shape potential green refinancing programs, and it will help classify eligible projects for such programs.
- Beyond facilitating green finance mobilization, the national green taxonomy will have significant benefits in facilitating the integration of climate-related considerations into risk management in the financial sector (classifying risks).

**Figure 11.3: National Green Taxonomy and Green Finance Mobilization**



Source: Original figure for this strategy.

90 World Bank, Jordan Inclusive, Transparent and Climate Responsive Investments Program for Results <https://projects.worldbank.org/en/projects-operations/project-detail/P175662>.

## Box 11.1: Green Taxonomy: Selected Examples

**The concept of a green taxonomy was introduced in 2012 by the Climate Bonds Initiative.** Initially, it was supposed to serve as a voluntary guideline for green bonds. However, over time the importance of a green taxonomy has grown exponentially, and taxonomies are now increasingly used by governments as one of the key policy tools in their climate agenda. Globally, taxonomies vary in granularity: some of them provide high-level guiding principles (“principles-based taxonomies”); others include technical details of specific project technologies and entail technical thresholds to assess eligibility for “green.”

**European Union (EU).** The EU’s green taxonomy was developed by the European Commission as part of the EU Sustainable Action Plan, which supports the EU’s ambitious climate and energy targets to halve greenhouse gas emissions by 2030 and reduce emissions to net zero carbon by 2050. The Taxonomy Regulation entered into force in July 2020 and established the basis for the EU taxonomy by setting out four overarching conditions that an economic activity has to meet to qualify as environmentally sustainable: (a) make a substantial contribution to at least one of the six environmental objectives: climate change mitigation, climate change adaptation, sustainable use of water and marine resources, circular economy, pollution prevention, and healthy ecosystems and biodiversity; (b) do no significant harm to any of the other environmental objectives; (c) comply with minimum social safeguards; and (d) comply with the technical screening criteria. The EU taxonomy includes activity metrics and thresholds to define the eligibility of activities (it uses NACE, the statistical classification of economic activities in the EU). Many jurisdictions use the EU taxonomy as a reference point for developing their national taxonomies.

**In Bangladesh, the development of a green taxonomy was led by the central bank.** The overarching objective of this taxonomy is to provide a comprehensive list of green products and initiatives eligible for financing and a clearly defined scope for financing green innovations. Its target users are banks and financial institutions. The taxonomy does not have references to specific industrial classification codes. From the sectoral coverage perspective, the Bangladesh taxonomy includes eight categories: renewable energy; energy and resource efficiency; alternative energy; liquid and solid waste management; recycling and manufacturing of recyclable goods; environment-friendly brick production; green environment-friendly establishments; and miscellaneous, listing 55 green products, projects, or initiatives. The application of the taxonomy is mandatory.

**In Mongolia, a green taxonomy was approved by the Financial Stability Board in 2019.** The overarching objective of the authorities that developed the taxonomy was to develop a nationally agreed upon classification framework of activities that contribute to climate change mitigation, adaptation, pollution prevention, resource conservation, and livelihood improvement in the context of green finance. Mongolia’s taxonomy specifies the following categories: renewable energy; energy efficiency; pollution prevention and control; sustainable agriculture; land use; forestry, biodiversity conservation, and ecotourism; low-pollution energy; green buildings; sustainable water and waste use; and clean transport. The taxonomy includes 28 subcategories, with examples of technologies. It details technical screening criteria, for example, energy efficiency—20 percent greenhouse gas emissions reduction; green building—internationally accepted green building certificate; and sustainable water use—20 percent water savings.



## Objective: Initiate and operationalize a Green Credit Bureau

**While a green taxonomy can reduce information costs and information asymmetry by providing a common language to classify green activities and investments, additional information will likely be needed to inform a risk assessment** (credit risk, market risk, environmental and social risk, and so forth) that FIs would conduct before approving green finance applications. This may require more detailed borrower-level information to assess their risk and return profile. A centralized green finance database, information system, or green credit bureau (figure 11.4) are options to facilitate collection and exchange of climate-related and environmental credit information.

**Some countries have already started complementing their credit bureau data with information relevant to green financing.** For example, the Central Bank of Brazil is developing a Sustainable Rural Credit Bureau (known as the Green Bureau), which is expected to be completed by the end of 2023. In addition to facilitating FIs' risk management process, the bureau is also expected to facilitate the development of a green bond market, as well as the securitization of green credit operations through the provision of information about the greenness of collateral. Guided by the principles of open finance, the Green Bureau in Brazil will enable beneficiaries of rural credit to share their information with any interested party, without the need for intermediation by financial agents. This data sharing will allow for better asset pricing, which can benefit credit conditions and provide incentives for the adoption of practices with social, environmental, or climate-related characteristics.<sup>91</sup> By bringing more information and transparency to the rural credit system, one of the expected results of the Green Bureau will be to foster the conditions for greener agriculture.<sup>92</sup> Also, all operations receiving any government subsidy will be required to provide full disclosure to the Green Bureau. As indicated by the Central Bank of Brazil, sharing information related to sustainable operations allows its use by green bond certifiers, rating agencies specializing in ESG criteria, and service providers hired to audit the adherence of enterprises to social and environmental requirements.<sup>93</sup>

**CRIF Jordan is the only licensed credit bureau in Jordan. It was licensed in 2015 and is supervised by CBJ.**<sup>94</sup> It collects credit information from banks, leasing companies, FIs established under special laws, MFIs, and others. Using this information, CRIF generates consumers' credit reports, which can be obtained both by credit providers that subscribe to the CRIF service and by consumers themselves. CRIF has a scoring assessment system that provides a score indicating the predicted level of risk of a particular client.

**CBJ will engage with CRIF Jordan to explore the possibility of complementing the current credit information system with attributes linked to climate-related, environmental, and social aspects relevant for credit risk.** For similar systems to be able to reduce green finance transaction costs and to address informational gaps, potential borrowers or investees need to be able to submit information about their ESG credentials (subject to availability of such information) directly to the credit information system. This would be a new feature of the CRIF Jordan

91 Central Bank of Brazil (BCB), "Notes from the President of the Central Bank of Brazil, Roberto Campos Neto, in Plenary Session of the Global Carbon Market Congress Decarbonization and Green Investments" (BCB, Brasilia, 2022), <https://www.bcb.gov.br/conteudo/home-ptbr/TextosApresentacoes/Apontamentos%20RCN%20Mercado%20Global%20de%20Carbono%20Plen%C3%A1ria%20vpub.pdf>.

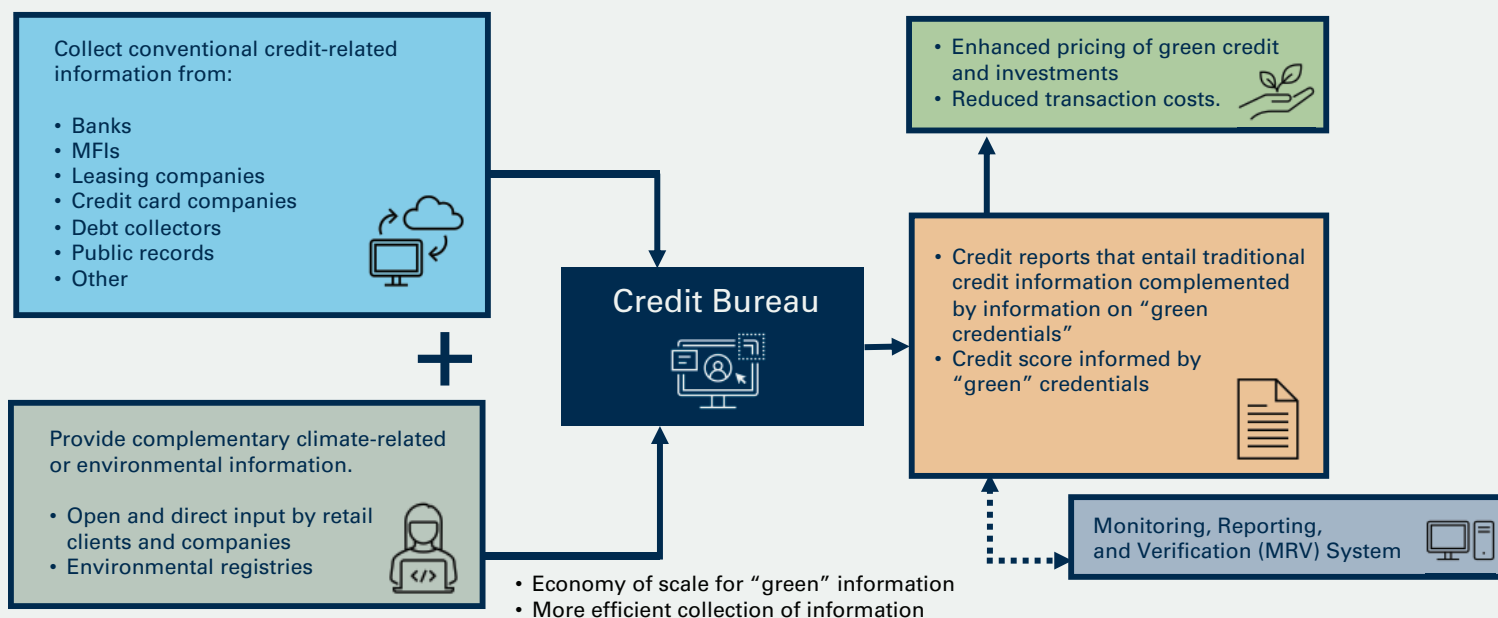
92 Central Bank of Brazil, "Sustainable Finance: From Pledges to Progress—October 20th, 2022, Fernanda Guardado, Deputy Governor of the Central Bank of Brazil" (BCB, Brasilia, 2022), [https://www.bcb.gov.br/conteudo/home-ptbr/TextosApresentacoes/FG\\_GIZ\\_20.10.22.pdf](https://www.bcb.gov.br/conteudo/home-ptbr/TextosApresentacoes/FG_GIZ_20.10.22.pdf).

93 Central Bank of Brazil, "Report on Social, Environmental and Climate-Related Risks and Opportunities," volume 2 (Annual Publication, BCB, Brasilia, December 2022), [https://www.bcb.gov.br/content/publications/report-risk-opportunity/Report\\_social\\_environmental\\_climate\\_risks\\_opportunities\\_1222.pdf](https://www.bcb.gov.br/content/publications/report-risk-opportunity/Report_social_environmental_climate_risks_opportunities_1222.pdf).

94 Central Bank of Jordan, Credit Bureaus Sector Supervision, <https://www.cbj.gov.jo/Pages/viewpage.aspx?pageID=194>.

credit information system, and how to facilitate the usage and submission of ESG information to CRIF will require targeted discussions with CRIF and other relevant stakeholders (FIs, business associations, SMEs, and so forth). This initiative could contribute to broader efforts to develop open banking in Jordan. Initial stages could focus mostly on collecting new attributes, and once a critical mass of data is reached, this new information could be used to inform a credit scoring system run by CRIF.

**Figure 11.4: Potential Concept of a Green Credit Bureau in Jordan**



Source: Original figure for this strategy.  
 Note: MFI = microfinance institution.

**At some point, if a Green Credit Bureau is operationalized, it would be important to connect it to the Jordan's MRV system.** Jordan is a front-runner in the region in establishing and operationalizing the first-of-its-kind climate finance and carbon markets ecosystem. One of its important building blocks is an MRV system, which is a centralized repository of all climate change mitigation (and, in the near future, possibly adaptation) actions of the country. It supports the calculation of GHG emissions and emission reductions and records the financial support. The MRV system in Jordan is owned by the MOENV and has been developed with support from the World Bank's Partnership for Market Readiness. The MRV system operates at four levels: national, sectoral, ministry, and project. It supports validation and verification of the data supporting access to climate finance and enables future carbon finance-related instruments. Overall, the system supports national efforts in tracking and reporting on the country's efforts to mitigate and adapt to climate change effects across all sectors. Linking the green credit bureau to the MRV system could be a major step in collecting information from the financial sector on Jordan's NDC. In addition, MRV has the potential to support carbon accounting of FIs' potential direct lending, to support capital markets' operations with needed customization, and to provide the functionality to avoid double-counting of emissions.

## Objective: Promote climate-related disclosure and reporting

**Providing comparable, verifiable, and accessible climate-related data can support monitoring, decision-making, and financing of climate-responsive investments.**<sup>95</sup> Climate-related and environmental disclosure and reporting play an important role in this regard. The Green Credit Bureau just discussed serves the reporting component. Public disclosure, which is discussed in more detail in chapter 8, is another important tool to address informational gaps and contribute to better-informed green financing decisions and the expansion of the green finance market.

## Objective: Conduct comprehensive assessment and monitoring of green finance flows in Jordan's financial sector

**To monitor the progress in green finance mobilization in Jordan's financial sector, it will be important to conduct standardized and comparable assessments of the green finance flows in the financial sector.**

Accurate estimation is contingent on several preconditions. For example, it will be important for CBJ to adopt a comprehensive official definition of green finance, which would be aligned with a national green taxonomy. In addition, having a Green Loan Framework and broader green finance guidelines issued by CBJ, as discussed in the next sections, will facilitate the estimation and monitoring of green finance flows in the financial sector.

**Until the national green taxonomy is adopted, CBJ will take initial steps in estimating and monitoring green financing.** CBJ requested banks, MFIs, and insurance companies to run a guided self-assessment in April–May 2023 to provide the first approximate reference point of the current green finance proportion on FIs' balance sheets. This proportion was estimated around 3 percent in the banking sector, around 1 percent in the microfinance sector, and 1 percent in the insurance sector. It is a first step into a broader CBJ's initiative to conduct a comprehensive assessment of the amount of green finance in Jordan's financial sector and to monitor this amount over time. These estimates will be revised after a more comprehensive assessment is conducted following the adoption of the national green taxonomy. The self-assessment was conducted according to the following criteria:

- Banks identified green assets in their loan portfolio and investment portfolio; MFIs, in their loan portfolio; insurers, in their insurance policies and investment portfolio.
- The eligibility categories for green assets were aligned with the list of categories provided in the Loan Market Association's (LMA) Green Loan Principles (GLPs) (renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management of living natural resources and land use, clean transportation, and other categories).<sup>96</sup>
- For investment portfolios, FIs were asked to count green bonds and other similar green labeled instruments.
- For insurance policies, those policies that covered catastrophe and other climate-related natural hazards could be counted.

95 Anne-Marie Gulde-Wolf, "Concluding Remarks by Anne-Marie Gulde-Wolf, Acting Director, Asia and Pacific Department, IMF, Presented at the Conference on Climate-Related Financial Risks and Green Finance in Asia and Pacific Region," June 2022, <https://www.imf.org/en/News/Articles/2022/06/07/060122climate-related-financial-risks-and-green-finance-concluding-remarks-anne-marie-gulde-wolf>.

96 Loan Market Association (LMA), "Green Loan Principles" (LMA, London, 2018), [https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/LMA\\_Green\\_Loan\\_Principles\\_Booklet-220318.pdf](https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/LMA_Green_Loan_Principles_Booklet-220318.pdf).



## 11.2 LEVEL THE PLAYING FIELD FOR GREEN FINANCE PRODUCTS AND SERVICES

### Objective: Adopt a Green Loan Framework

**As is the case with conventional finance, loans will likely be the most prevalent type of green finance product in Jordan.** One of CBJ's priority actions under the strategy will be to implement measures enhancing the comparability, reliability, and transparency of green loan activities by credit institutions. In general terms, a green loan is a financing instrument that enables borrowers to use loan proceeds exclusively to fund projects that make a substantial contribution to environmental or climate-related objectives. In some sense, a green loan is similar to a green bond because it raises capital specifically for eligible green projects or investments. However, a green loan is typically smaller in size than a bond (though, not always: for example, in 2021 the Ministry of Finance in Egypt signed an agreement for a US\$1.5 billion green loan). Green loan origination is often easier than issuing a bond. Loans have lower lending thresholds, making them more accessible to smaller borrowers. Green bonds usually have higher transaction costs and should be listed on an exchange or privately placed.

**To date, the existing international green loan standards have been focused on the wholesale green loan market.** For example, in 2018 the LMA, together with the Asia Pacific Loan Market Association and with the support of the International Capital Market Association (ICMA), issued high-level Green Loan Principles (GLPs; box 11.2), which are built on the Green Bond Principles.<sup>97</sup> As in the Green Bond Principles, the GLPs specify that 100 percent of the proceeds should be used for green-eligible activities only. In addition, it is recommended that information on the use of green loan proceeds is reported annually to the institutions participating in the loan. The GLPs also recommend an external review process, when appropriate. The GLPs provide the following list of categories of eligibility for green projects: renewable energy; energy efficiency; pollution prevention and control; environmentally sustainable management of living natural resources and land use; terrestrial and aquatic biodiversity conservation; clean transportation; sustainable water and wastewater management; climate change adaptation; eco-efficient and/or circular economy–adapted products, production technologies, and processes; and green buildings.

**LMA explicitly highlights that its GLPs target the wholesale green loan market.** Given the higher transaction cost of bond issuance, corporations or investors in Jordan with relatively smaller green projects may prefer to finance them with green loans rather than issuing green bonds. Corporate green loans can have catalytic effects on mobilizing climate finance.

**Jordan, however, will need to focus on developing both the retail and larger-scale green loan market.** Retail green loans to households and MSMEs can be a powerful entry point to scale up green finance in Jordan with immediate outreach—for example, to improve buildings' energy performance (green mortgages) or switch to more climate-friendly vehicles (green consumer loans).

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<sup>97</sup> ICMA encompasses other associations, such as the Asia Pacific Loan Market Association and the Loan Market Association, and provides benchmark reports and international standards.

**International standards for retail green loan products are still emerging.** For example, in November 2022 the European Banking Authority (EBA) received a Call for Advice from the European Commission on the definition and possible supporting tools for green loans and mortgages to retail and SME borrowers.<sup>98</sup> Following that request, the EBA launched an industry survey for input from credit institutions on their green loans and mortgages as well as market practices related to these loans.

**Although a global approach for retail green loans is still in the making, it is clear that to develop this market a proportionality principle will have to be applied.** For smaller companies and households, it would likely be too burdensome and too costly to fully comply with LMA's GLPs, such as annual reporting on the impact and use of proceeds, getting external verification, and so forth. For such customers, the green loan products would not be attractive. Thus, CBJ's Green Loan Framework will aim to set the minimum standard for the "green loan label" that should be met by all creditors and borrowers but will try to minimize the cost.

### Box 11.2: Four Green Loan Principles (GLPs)

**As defined by the Loan Market Association, green loans are any type of loan instrument made available exclusively to finance or refinance, in whole or in part, new and existing eligible green projects.** Green loans must align with the four core components of the GLPs, as set out in the following:<sup>a</sup>

**PRINCIPLE 1:** Use of Proceeds. The fundamental determinant of a green loan is the utilisation of the loan proceeds for green projects (including other related and supporting expenditures, including R&D), which should be appropriately described in the finance documents.

**PRINCIPLE 2:** Process for Project Evaluation and Selection. The borrower of a green loan should clearly communicate to its lenders: (i) their environmental sustainability objectives; (ii) the process by which the borrower determines how its projects fit within the eligible categories; and (iii) the related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental risks associated with the proposed projects.

**PRINCIPLE 3:** Management of Proceeds. The proceeds of a green loan should be credited to a dedicated account or tracked by the borrower to maintain transparency and promote the integrity of the product. Borrowers are encouraged to establish an internal governance process through which they can track the allocation of funds towards Green Projects.

**PRINCIPLE 4:** Reporting. Borrowers should make and keep readily available up to date information on the use of proceeds to be renewed annually until fully drawn, and as necessary thereafter in the event of material developments. This should include a list of the green projects to which the green loan proceeds have been allocated and a brief description of the projects and the amounts allocated and their expected impact.

a. Loan Market Association (LMA). 2018. "Green Loan Principles." London: LMA. [https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/LMA\\_Green\\_Loan\\_Principles\\_Booklet-220318.pdf](https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/LMA_Green_Loan_Principles_Booklet-220318.pdf).

98 European Banking Authority (EBA), "EBA Seeks Input from Credit Institutions on Green Loans and Mortgages" (news item, February 13, 2023), <https://www.eba.europa.eu/eba-seeks-input-credit-institutions-green-loans-and-mortgages>.

## CBJ's Green Loan Framework

One of the main objectives of CBJ's green loan framework will be to ensure the comparability, reliability, and transparency of green loan activities in Jordan. CBJ will explicitly consider how to keep the costs of a green loan label minimal to encourage the uptake of this product, while sufficiently preventing greenwashing. It is expected that the framework will benefit the market by providing guidance in the following areas (figure 11.5):

- Establish a green loan definition, which would be directly linked to the national green taxonomy, together with minimum standards and a method to qualify a loan as green.
- Discuss the loan origination process and minimum precontractual information.
- Provide key principles for product governance and consumer protection.
- Differentiate between large-scale and retail green loan products and how the proportionality principle applies to them. While overall requirements for retail green loans would be lower, they should still be able to demonstrate alignment with the green taxonomy.
- Consider how the underlying collateral of green mortgages and loans should be assessed and viewed from a sustainability point of view with the aim of ensuring both the usability and the credibility of the degree of greenness of the mortgages and loans on the basis of the greenness of their collateral.

Figure 11.5: CBJ's Green Loan Framework



Source: Original figure for this strategy.



## Objective: Issue guidelines for the development of green finance products and services

**The green loans that have been discussed are one of several green finance products and services that could realistically get traction in Jordan’s financial sector.** In addition to adopting a Green Loan Framework, CBJ will prepare market development guidelines for a broader range of green finance products and services. These guidelines will outline the benefits and drawbacks of each product and high-level principles for governance, design, consumer protection, and management of greenwashing risk. Having these guidelines will stimulate market dialogue, raise awareness about the spectrum of available green financing options, and guide FIs in preparing a strong (and consistent across FIs) green finance offering for their clients. These guidelines will cover and differentiate between retail and larger-scale products and services.

**The main difference between green financial products and others is that the proceeds linked to green products are specifically tied to certain environmental or climate-related objectives or activities.** Other than that, green products can follow fundamental design features similar to those of conventional financing. Green financial products and services are becoming more prevalent worldwide, with more banks practicing green banking or actively seeking investment opportunities in climate-friendly sectors or businesses. It is a trend perceived not only among smaller specialized banks but also among diversified financial service providers, asset management firms, and insurance companies (although in the insurance sector there is still a lot of room to expand the offering of climate-responsive products). In the retail space, these products include green mortgages, green consumer loans, green credit card services, and green deposit or savings accounts. Similarly, the products and services on the wholesale banking side could get a green label, in areas such as project finance, trade financing, securitization, and venture capital and private equity. Table 11.1 presents several examples of green finance products. Overall, in Jordan the development of green products and services will have to go hand in hand with a broader agenda on financial inclusion and access to finance measures and policies.



**Table 11.1: Examples of Green Financial Products and Services**

Product	Features and examples
<b>Green mortgage</b>	Green mortgages, or energy-efficient mortgages, typically have lower-than-market interest rates and are granted to retail clients who purchase energy-efficient homes or invest in retrofits, energy-efficient appliances, or green power. Lower interest rates may be justified through several means. For example, retrofitting and improving energy efficiency can have a positive impact on property value, ensuring wealth conservation and loss mitigation, and reduced energy costs can positively affect a borrower's credit risk. However, the impact of these factors on credit risk is still being estimated globally. For example, in the EU, one of the objectives of the EMF-ECBC initiative on energy-efficient mortgages is to systematically collect data that helps establish a correlation between energy efficiency, probability-of-default, and loss-given-default. <sup>a</sup> As an example, in the UK, Barclays offers green home mortgages for clients who are buying newly built properties directly from a builder or developer. If the home has an energy efficiency above a certain level, the bank provides lower interest rates on some fixed-term mortgages. Many emerging-market banks are unable to fund green homes because of a shortage of green property pipelines, and this may be a challenge in Jordan as well.
<b>Green commercial real estate loan</b>	Similar to green mortgages, loans can be designed to finance green commercial buildings, characterized by lower energy consumption, reduced waste, and less pollution than traditional buildings. Commercial real estate lenders are increasingly offering loans based on sustainable performance as demand grows for green-linked financing.
<b>Green car loan</b>	Green car (or fleet) loans are similar to regular car loans with the main difference being that this type of financing is meant solely for purchasing a clean-energy car (or fleet or upgrading the fleet). For example, Bank Australia offers discounted car loans to buy or refinance an existing car loan, with the following kinds of cars and motorbikes being eligible: (a) pure electric, (b) plug-in hybrid electric, (c) regenerative hybrid, (d) vehicle whose internal combustion engine produces less than 125 grams of tailpipe CO <sub>2</sub> per kilometer according to the Green Vehicle Guide. The car can be brand new or up to seven years old.
<b>Green deposit and savings accounts</b>	Green deposit and savings accounts offer an opportunity to their holders to influence how their deposits are used. A number of banks globally have launched this type of product, through which FIs commit to invest deposits in environmentally and climate-friendly projects. Typically, these deposits offer higher interest rates.
<b>Green credit card</b>	There are variations of green credit card products. For example, some banks offer apps that calculate the carbon footprint of purchases, and others offer cash back for shopping for sustainable products or from environmentally conscious companies.
<b>Sustainable trade finance</b>	Sustainable supply chain finance refers to financial practices and techniques that incentivize sustainable behaviors among parties to a transaction. In practice, sustainable finance supply chain finance rewards suppliers for integrating ESG priorities into their supply chain. <sup>b</sup>

Note: CO<sub>2</sub> = carbon dioxide; EMF-ECBC = European Mortgage Federation-European Covered Bond Council; ESG = environmental, social, and governance; EU = European Union; FIs = financial institutions; UK = United Kingdom.

a. EMF-ECBC represents the private sector in the mortgage business in the EU. It works on the development of a standardized, pan-European mortgage financing mechanism, according to which EU citizens are incentivized to improve the energy efficiency of their buildings or acquire an already energy efficient property, by way of preferential financial conditions linked to the mortgage. Information available at: <https://hypo.org/ecbc/>

b. Trade Finance Global, Sustainable supply chain finance, <https://www.tradefinanceglobal.com/sustainability/#:~:text=Sustainable%20supply%20chain%20finance%20refers,priorities%20into%20their%20supply%20chain.>

**Islamic green finance products and services will be an integral part of CBJ's guidelines for green finance products and services (figure 11.6).** There are several fundamental preconditions that need to be implemented to unlock the potential of Islamic finance in Jordan beyond green financing (see chapter 10). In parallel to addressing these preconditions, the Framework for Sharia-Compliant Sustainable Finance will set the foundation for Islamic green finance.

**Figure 11.6: Facilitating Development of Islamic Green Finance Products and Services**



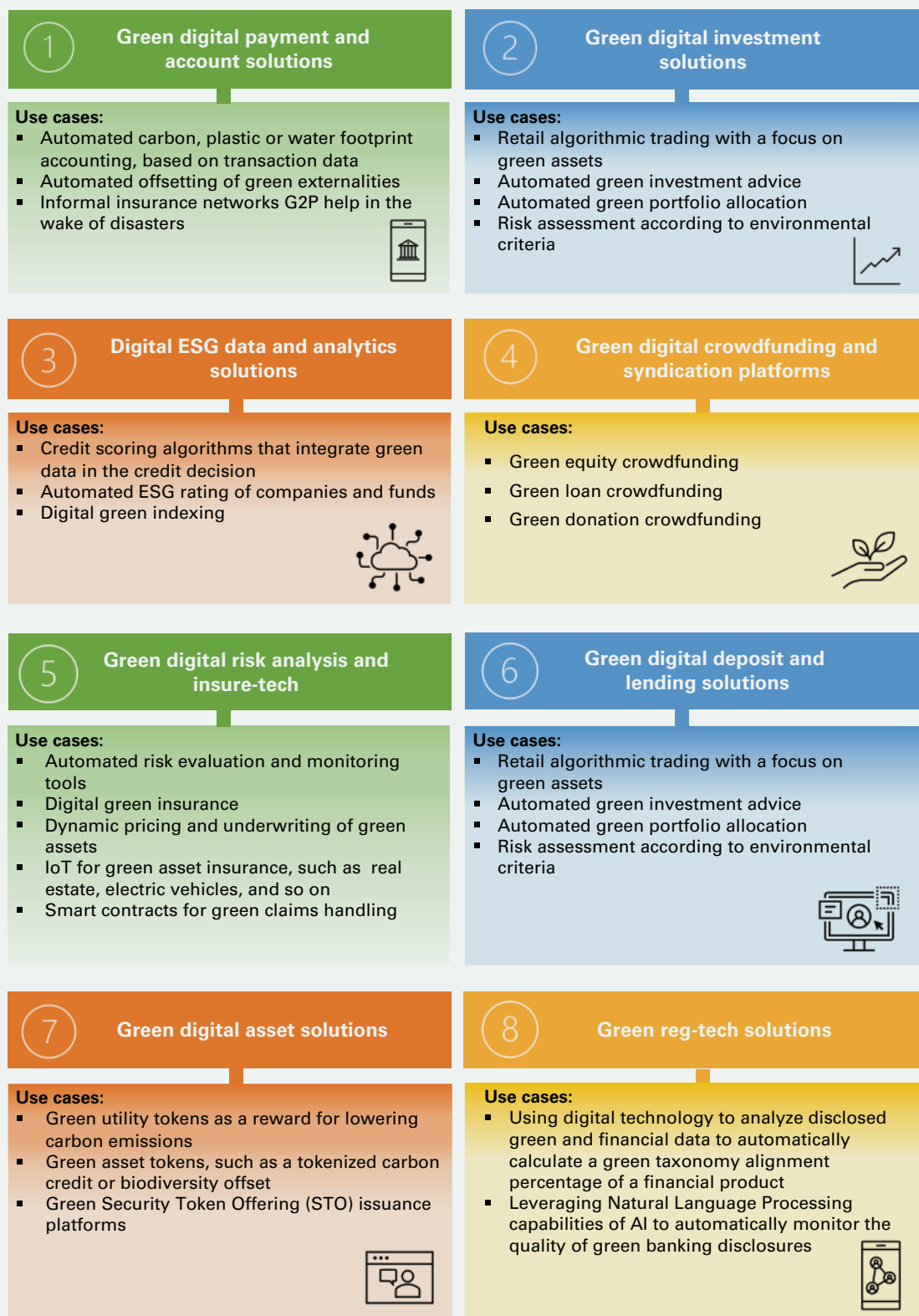
Source: Original figure for this strategy.  
Note: Central Bank of Jordan.

## Objective: Promote technology-enabled innovations in green finance

**CBJ will promote development and application of technology-enabled innovation to foster the green finance market in Jordan.** The Green Fintech Classification, issued by Green Digital Finance Alliance and Swiss Green Fintech Network in 2022, identified eight categories of commercial green financial technology (fintech): (a) green digital payment and account solutions; (b) green digital investment solutions; (c) digital ESG data and analytics solutions; (d) green digital crowdfunding and syndication platforms; (e) green digital risk analysis and insurance technology (insuretech); (f) green digital deposit and lending solutions; (g) green digital asset solutions; and (h) green regulatory technology (regtech) solutions (figure 11.7).



**Figure 11.7. Eight Categories of Green Fintech and Examples of Use Cases**



Source: Green Digital Finance Alliance and the Swiss Green Fintech Network, “Green Fintech Classification” 2022, [https://drive.google.com/file/d/1jhYybC5aF9qHYb36\\_OT4rfmx0aorrieh/view](https://drive.google.com/file/d/1jhYybC5aF9qHYb36_OT4rfmx0aorrieh/view).

Note: ESG = environmental, social, and governance; IoT = internet of things.

**There are examples of products established in different countries in each of the eight categories presented available in figure 11.7.** When it comes to green regtech, for example, the Central Bank of Spain is leveraging natural language processing (NLP) capabilities of artificial intelligence (AI) for TCFD disclosure tracking. The Central Bank of Spain has built an algorithm based on a TCFD taxonomy for automated information extraction for AI-supervised analysis of the Spanish banking sector to generate a TCFD compliance index for each of the four main areas of the TCFD framework (governance, strategy, risk management, and metrics and targets) for the period 2014–19 using corporate reports. The index leverages text mining to give an overview of the evolution of the level of climate-related financial disclosures present in the corporate reports of the Spanish banking sector.

**CBJ will aim to analyze and identify the most realistic options to leverage fintech and other innovative solutions to facilitate the green financing ecosystem in Jordan, including through the existing fintech regulatory sandbox.** This can be done as part of the financial inclusion agenda and, beyond it, can be linked to concrete action points under this strategy, such as operationalizing the Green Credit Bureau and applying innovative solutions for collecting and analyzing climate-related data for financial stability, microprudential, and green financing purposes. Once the climate-related and environmental disclosure and reporting requirements are in place, CBJ will also consider applying regtech solutions, similar to the one used by the Central Bank of Spain for TCFD disclosure tracking. Another potential area for regtech, as indicated in figure 11.7, is to automatically verify, through innovative technology-enabled solutions, the alignment of certain green finance products and services to the national green taxonomy (when it is adopted in Jordan).

**As an entry point to promote digital solutions for green financing, the CBJ will relook into the work that has been done so far by the government of Jordan, with support by the World Bank Group, under the Partnership for Market Readiness.** This engagement included a feasibility study and conceptualization of a Digital Finance Platform for Clean Energy. One of the objectives of this platform would be to support matchmaking between commercial banks and customers for clean energy products, both for renewable energy and energy efficiency. It also envisioned utilization of data from the credit bureau. Operationalizing a similar platform could support advancing digital economy in Jordan and increasing green finance flows; however, the discussions on the concrete operational model as well as financial resources needed to develop and operationalize this potential platform should be refreshed going forward.

## **Objective: Promote development of climate-related insurance and disaster risk finance products**

**Climate-responsive insurance is an important type of green finance product that can enhance the resilience of businesses and households against shocks linked to climate change physical risks.** Jordan's vulnerability to climate disasters is expected to increase with the growing impact of climate change. For example, rising temperatures, more erratic rainfall, declines in available water, and an increased likelihood of heat waves will pressure the country's already very limited water resources. Consequently, the indirect impacts on several sectors including agriculture, industry, power, and tourism are expected to increase, thereby increasing the risks of transmission to the economy and the financial sector.

**The high concentration of economic and social activities in three cities in Jordan, coupled with a medium to high disaster-risk profile, makes Jordan particularly vulnerable to natural disasters.** Certainly, disasters that affect Amman or other densely populated areas (such as Irbid and Zarqa) could have the greatest potential for inflicting high direct damage. With a concentration of loans in Amman of more than 80 percent of all loans, banks and the banking system in Jordan could be highly exposed to natural disasters there. Through financial system exposures, damages and economic losses resulting from a natural disaster can be transmitted to the financial system through both macro- and microeconomic impacts, which may affect financial stability and the capacity of the financial sector to finance the economy.

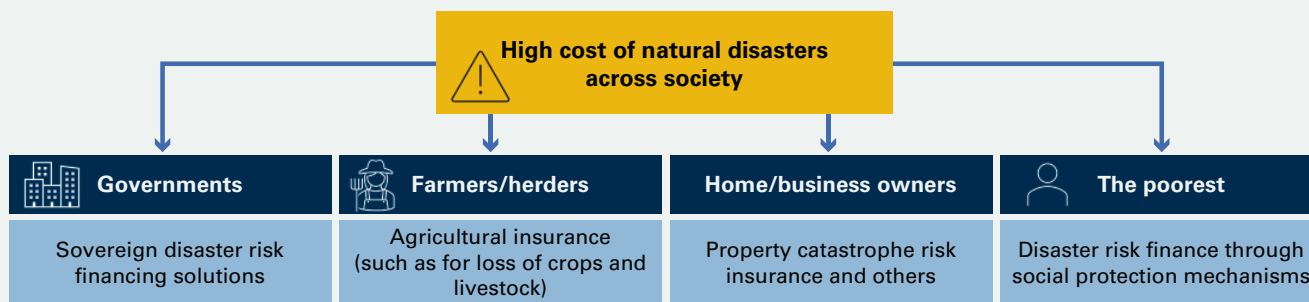
**The disaster protection gap (that is, the difference between insured and total losses) is significant in Jordan; few risk transfer options are used, and none have achieved wide coverage so far.** Jordan currently has no sovereign insurance to provide budget support after severe disasters. Property (fire) insurance that includes coverage against disasters is offered in Jordan as a policy combining fire and catastrophe perils (storms, floods, earthquakes, and volcanos). Nevertheless, with a market penetration rate of around 2 percent, the insurance sector is still on a development pathway, and the penetration of property insurance is mostly supported by mandatory insurance requirements under mortgage contracts. Agricultural insurance is available but is rarely purchased. At present, the main prearranged financial instrument in place in Jordan is the Agricultural Risk Fund, created in 2009. It initially covered risk from frost, but its scope was expanded in 2022 to include a wider range of agricultural risks.

**One of the reasons for the disaster protection gap in Jordan is lack of adequate Sharia-compliant options (Takaful coverage for natural catastrophe or climate change events).** This shortage excludes significant sections of the population, which might also be more typical among the economically weaker sections of society who are likely to be more vulnerable to losses caused by climate risk. As such, it is important to expand the Takaful coverage for climate-related risk exposures.

**Overall, there are several layers of disaster risk finance and climate insurance:** (a) The private sector–led climate-responsive insurance products offered to the retail sector (households), including property insurance, and other types of insurance with coverage against natural disasters such as extreme weather events; (b) commercial insurance products that include, for example, agricultural insurance (which can be considered as a separate broad insurance category on its own) and catastrophe insurance to businesses that protects against business interruption risks and helps the private sector ensure business continuity in case of climate-related shocks such as temporal relocation of the affected policyholders. In Morocco, for example, catastrophe risk insurance has been made compulsory for any insured homeowners and businesses; (c) sovereign-level disaster risk finance instruments that increase the financial response capacity of national and subnational governments to meet postdisaster funding needs without compromising fiscal balances and development objectives; and (d) disaster risk finance solutions provided through social protection mechanisms that indemnify vulnerable, uninsured individuals in case of catastrophe losses to themselves or their residence (figure 11.8).



**Figure 11.8. Disaster Risk Finance and Climate-Related Insurance**



Source: Adapted from Financial Protection Forum, “What Is Disaster Risk Finance (DRF)?,” <https://www.financialprotectionforum.org/what-is-disaster-risk-finance-drf>.

**The disaster risk reduction efforts in Jordan are coordinated by the National Centre for Security, Management and Crises (NCSMC).** In October 2022, Jordan launched the Natural Disaster Risk Reduction Strategy 2023–2030. Developing disaster risk financing and climate-related insurance instruments will help achieve national objectives in the disaster risk area. The World Bank Group’s background note for the *Jordan Country Climate and Development Report (CCDR)* provides the following three categories of recommendations linked to disaster risk finance and climate insurance in Jordan. CBJ will aim to contribute to the implementation of these recommendations, as much as it falls under its mandate:

- **Improving risk understanding:** (a) *Improving data availability and granularity.* Investments have been made in the collection and production of vulnerability and risk data in Jordan; however, data collection on disaster events (for example, severity and damages) and financial exposure are still quite fragmented and not widely shared. It will be critical to put in place a comprehensive, accessible risk data framework to enable public and private decision-makers to make risk-informed financial decisions. (b) *Supporting the development and improvement of catastrophe models and risk modeling tools* (for example, flood or drought catastrophe modeling). Historical damage data provide an initial indication of risk but should be complemented by more sophisticated forward-looking risk assessments to inform financial resilience policy and instruments. Such forward-looking analyses should account for the impact and uncertainty of climate change.
- **Performing quantitative assessments of disaster risks:** (a) *Performing climate (physical) risk assessments and stress testing for the financial system.* Physical climate-risk assessment provides a structured approach to identifying, analyzing, and evaluating the impacts of key physical climate risks, including direct damages and indirect impacts on the economy and financial sector. Climate physical risk assessments can help improve the resilience of the financial sector and identify opportunities for climate adaptation finance. (b) *Financial protection gap analysis to assess the status of financial preparedness of Jordan for disasters and crises.* This assessment could entail analysis of the following: the scale of economic losses following disasters; prearranged funding available to the government and existing post-episode sources of funding; key legal and institutional arrangements relevant to disaster-risk finance; and, if possible, the funding gap (the difference between the prearranged funding available and government liability driven by disaster losses).

- **Scaling up financial protection for greater financial resilience against disasters:** (a) As a collective effort by relevant national authorities, a disaster risk financing and climate insurance strategy should be developed to identify the optimal risk-layering approach and to clarify the priorities in disaster-risk financing. This strategy could identify various risk financing instruments to target different groups and address disasters of different frequency and severity. The strategy could also help leverage private capital. Moreover, the disaster risk financing (DRF) strategy could bring together sovereign disaster risk finance, agricultural insurance, property catastrophe risk insurance, and scalable social protection programs. This is critical to manage the associated contingent liabilities and their impact on the budget and to ensure access to rapid, reliable, effective, and cost-efficient finance for recovery and reconstruction. Resilience and financial protection against losses driven by climate change can be enhanced significantly by ensuring the availability of appropriate Takaful coverage. These strategic efforts could promote the development of the domestic catastrophe insurance market by improving the policy framework for private insurance (including agricultural insurance) and building the capacity of companies in the area of disaster risk insurance. It would also help expand the range of available sovereign DRF tools (for example, contingent credit) and scale up market-based solutions (for example, sovereign reinsurance) through an optimal risk-layered approach that ensures timely and predictable access to funds, ultimately improving the resilience of households, businesses, and the country.

**CBJ stands ready to cooperate with other authorities in Jordan to develop a dedicated disaster risk financing policy or strategy and to strengthen the disaster risk finance and climate insurance market.** Most of the mentioned actions recommended by the World Bank, especially those linked to the development of country-level DRF instruments, will require collective efforts and leadership from authorities such as the Ministry of Finance. However, quite a few recommendations are already reflected in this strategy. For example, CBJ will conduct climate-risk assessment for the financial sector (chapter 5); addressing data gaps is also an important pillar of this strategy. Given the potential of Takaful options for improving resilience to climate change effects, CBJ intends to coordinate its actions for green finance and those for development of Islamic finance, with the aim of promoting development of appropriate Takaful products addressing vulnerable segments of the economy.

**One of the areas where CBJ can have direct impact is through targeted market development efforts linked to developing climate-responsive retail and commercial insurance products.** However, it is important to highlight that globally there is still significant room for the insurance industry to enhance the offering of affordable insurance products with appropriate coverage of climate-related risks. For example, business continuity coverage is still challenging, especially for SMEs and, overall, there is very little climate-related risk coverage under retail insurance products. CBJ will monitor the emerging global trends and will engage in market dialogue with the insurance industry in Jordan to explore the most realistic options to expand the offering of climate-responsive insurance products. Also, the development guidelines for green finance products and services discussed in previous sections will have a dedicated focus on climate risk insurance products.

## Objective: Promote transition and adaptation financing

**In the medium term, once FIs enhance their capacity and are more confident in the climate-related area, CBJ will consider introducing a requirement for FIs to prepare and implement their low-carbon transition and adaptation plans.** Transition plans are a relatively new development. Although many FIs globally have committed to net zero or similar climate-related objectives, it is important to translate these commitments into concrete, detailed actions plans. This is where the transition plans come in: a transition plan is a detailed multiyear account of targets and actions that sets out how a given financial institution will ensure that its business model and strategy are compatible with a specific environmental and climate-related objective, such as the goal of limiting global warming to 1.5°C. The transition plan should include the indicators, milestones, metrics, products, measures, and timelines necessary to deliver the decarbonization targets. Three types of transition plans are emerging: voluntary, market-led net zero transition plans; mandatory corporate disclosure net zero transition plans; and mandatory prudential transition plans that focus on the risks of misalignment with net zero targets.<sup>99</sup>

**Transition plans can be effective in enforcing FIs' accountability for climate action; in addition, they can stimulate transition financing in Jordan.** Achieving FIs' climate objectives may require proactive engagement in transition financing, which covers financial services provided to high carbon-emitting industries to fund transition to decarbonization. Therefore, transition plans may help FIs think through their green financing strategy in the medium and long term. Also, as Jordan is currently developing its long-term low-carbon development strategy (LTS), transition plans can contribute to integrating the financial sector perspective into the implementation of the LTS. CBJ will consider expanding the scope of these plans to cover both mitigation and adaptation dimensions (the latter could take the form of adaptation financing strategy or a plan). These plans are linked to the climate-related disclosure, and CBJ would require FIs to disclose their transition plans. It is important to highlight, however, that overall, this area is still nascent and may come too soon for CBJ and FIs to embrace at this point in time. Nonetheless, globally, developments seem to pick up quickly, and CBJ recognizes the relevance of transition and adaptation planning as a relevant future tool or regulatory requirement.

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<sup>99</sup> Simon Dikau et al., "Net Zero Transition Plans: A Supervisory Playbook for Prudential Authorities" (Policy Publication, Grantham Research Institute on Climate Change and the Environment, London, and Centre for Climate Change Economics and Policy, London School of Economics and Political Science, 2022), <https://www.lse.ac.uk/granthaminstitute/publication/net-zero-transition-plans-a-supervisory-playbook-for-prudential-authorities/>.



## 11.3 FOSTER PARTNERSHIPS TO FACILITATE MOBILIZATION OF GREEN FINANCE

### Objective: Promote development of green finance de-risking instruments

#### IMPORTANCE AND TYPES OF GREEN DE-RISKING INSTRUMENTS

**Constrained fiscal space faced by governments in many developing countries makes mobilizing private capital a key to achieving climate-related objectives.** Jordan faces a similar challenge: because the fiscal situation is tense, the NDC funding gap (conditional commitments) is significant, and climate-responsive financing from the private sector will need to play a major role in implementing the climate agenda. In this context, de-risking instruments may be required to catalyze green private capital.

**Green de-risking instruments help reallocate, share, or reduce the existing or potential risks associated with green investments.**<sup>100</sup> This is particularly relevant for more innovative and untested green projects. The importance of de-risking in green finance may overall be higher partly because the green asset class is relatively new and the evidence on the risk-return profile of green investments is still emerging. De-risking can be categorized into two broad areas. *Policy de-risking* means ensuring an attractive and robust enabling environment for private sector investments. A predictive and transparent enabling environment through policies and regulations that level the playing field and foster competition can naturally reduce risk perception and give more certainty to investors. *Financial de-risking* means specifically reducing financial risks associated with green investment. The latter can be done in a variety of ways—for example, through guarantees, debt instruments, and strategic deployment of public resources. Also, a variety of actors who offer to bear part of the risk can be involved in financial de-risking structures: governments, multilateral development banks, development financial institutions, climate funds, and so forth.

**The scale and complexity of a green investment suggests the most appropriate de-risking tool.** For green finance for MSMEs, the more suitable de-risking instrument might be credit guarantees, similar to what is used in Jordan to enhance SMEs' access to conventional finance. For large-scale green investment projects, blended finance structures may be needed to unlock and catalyze larger volumes of green private investment.

**Blended finance involves using capital from public or philanthropic sources to catalyze private sector investment to bridge the gap necessary to achieve sustainable development.**<sup>101</sup> Blended finance is not a new concept: the use of public funds and development guarantees to reduce risks and encourage participation by private capital has been around for many decades. However, the scale of blended finance has been relatively small compared to sustainable financing needs. Globally, annual flows of blended finance are estimated to have averaged less than US\$10 billion since 2015.<sup>102</sup> Blended finance rests on the use of financial enhancements to encourage private sector investors and lenders to participate in transactions that would normally exceed their risk appetites.

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100 Dhruva Purkayastha and Neha Khanna, "Ways to De-Risk Climate Finance," Climate Policy Initiative blog, April 13, 2022, <https://www.climatepolicyinitiative.org/blog-ways-to-de-risk-climate-finance/>.

101 Patricia Sulser, "Scaling Up PPPs by Engaging Impact Investing Charities and Foundations," Getting Infrastructure Finance Right blog, World Bank, Washington, DC, September 9, 2021, <https://blogs.worldbank.org/ppps/scaling-ppps-engaging-impact-investing-charities-and-foundations>.

102 Ravi Menon, "Opening Remarks," Transition Finance towards Net Zero Conference, Singapore, October 4, 2022, <https://www.bis.org/review/r221005b.htm>.

## Box 11.3: Blended Financing Examples in Jordan

### BLENDING FINANCING FOR THE EXPANSION OF THE AS-SAMRA WASTEWATER TREATMENT PLANT IN JORDAN

**A blended financial package was put in place to finance the expansion of the As-Samra Wastewater Treatment Plant.** The project was undertaken by the Samra Wastewater Treatment Plant Company Limited, a private operator that was recruited through a build-operate-transfer contract to finance, upgrade, and operate the treatment plant.

The private operator was required to mobilize private financing, which it did through an equity contribution and a syndicated limited recourse loan provided by domestic banks in local currency. The overall financial package also included public funds provided as viability gap funding, including contributions from the government of Jordan and a grant from the Millennium Challenge Corporation. Public funding was critical to help structure the deal and to convince private financiers to step in. Commercial debt was secured through a standard project finance limited recourse loan, from a syndicate of Jordanian local banks and financial institutions arranged by the Arab Bank. The limited recourse loan tenor is for 13 years, with an option to extend up to 20. At the time, this was the longest maturity that had ever been obtained for a Jordanian dinar-denominated limited recourse loan. Additional security was ensured through a cash waterfall account structure, and the agreement included step-in rights for the banks. The denomination of the loan in local currency provided the clients with protection against foreign exchange risk.<sup>a</sup>

### BLENDING FINANCING FOR THE FIRST CORPORATE GREEN BOND IN JORDAN

In March 2023, Jordan Kuwait Bank issued Jordan's first green bond to finance clean energy projects, low-carbon transportation, energy-efficient real estate, and sustainably managed water resources and waste. The International Finance Corporation (IFC) invested up to US\$50 million in the five-year bond. The financing was made of up to US\$36 million from IFC's own account, and a blended finance co-investment of up to US\$10 million from the Canada-IFC Blended Climate Finance Program and US\$4 million from the Dutch-funded MENA Private Sector Development Facility, both implemented by IFC.<sup>b</sup>

- a. World Bank, "Blended Financing for the Expansion of the As-Samra Wastewater Treatment Plant in Jordan" (Case Studies in Blended Finance for Water and Sanitation, World Bank, Washington, DC, 2016), <https://documents1.worldbank.org/curated/en/959621472041167619/pdf/107976-Jordan.pdf>.
- b. IFC, "IFC Invests in First Green Bond in Jordan to Boost Climate Finance, Spur Growth", March 2023, <https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=27438>

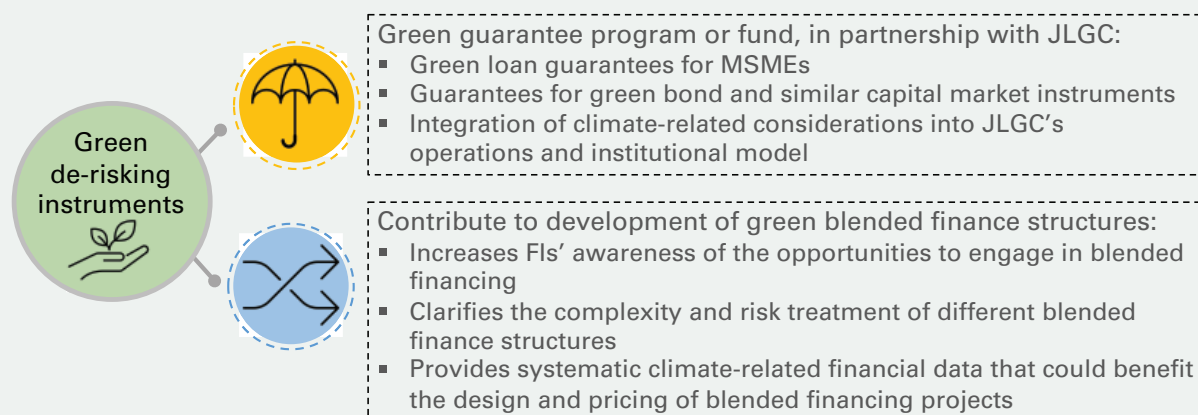
Financial enhancements can include anything that would reduce the risk of an investment or loan, particularly full or partial guarantees, as well as equity or subordinated debt participation.<sup>103</sup> Box 11.3 provides a summary of two blended finance examples in Jordan.

**There are two main options for CBJ to facilitate the development of green finance de-risking instruments in Jordan (figure 11.9):** (a) promote the development of a green credit guarantee program in partnership with JLGC, and (b) take part in national efforts to mobilize green blended financing structures. CBJ can be involved in the latter area through several means: by informing FIs of the opportunities for them to engage in blended financing; through clarifying the complexity and risk treatment of different blended finance structures; and by providing systematic climate-related financial data that could benefit the design and pricing of blended financing projects.

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103 Toronto Centre (TC), "Blended Finance: Implications for Supervisors" (TC Notes, TC, Toronto, Canada, 2021), [https://www.torontocentre.org/videos/Blended\\_Finance\\_FINAL.pdf](https://www.torontocentre.org/videos/Blended_Finance_FINAL.pdf).

**Figure 11.9: CBJ’s Contribution to the Development of Green De-Risking Instruments**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; FI = financial institution JLGC = Jordan Loan Guarantee Corporation; MSMEs = micro, small, and medium enterprises.

## CBJ’s contribution to green blended finance activities in Jordan

### **Financial regulators and supervisors have an important role to play in facilitating green blended finance.**<sup>104</sup>

First, building a robust supervisory and regulatory framework, strengthening local financial markets, and enhancing financial stability and inclusiveness all can contribute to increasing the attractiveness of external blended finance to Jordan, and CBJ’s mandate already covers all these action points. Second, FIs—for example, banks and insurance companies—can directly participate in blended financing schemes.

### **Blended finance structures may introduce an additional layer of complexity that requires more attention from CBJ as a financial supervisor.**

It is important to understand the risks inherent in the projects to be financed and how effectively these risks will be mitigated by the various enhancements provided by other parties such as international FIs, aid organizations, and nongovernmental organizations (NGOs). In certain cases, these enhancements can be quite complex. For example, in the case of guarantees, there are typically conditions to be met before the guarantee becomes enforceable. If blended finance projects can generate material commitment to the regulated FIs, supervisors need to be aware of that, understand the risks and risk mitigation techniques available, and make a judgment about how effectively the regulated entity is able to manage these risks. CBJ will aim to take a proactive approach to engaging financial sector participants in discussing the main blended financing structures and possibilities for FIs to participate in them in the future.

### **CBJ will develop internal capacity as well as encourage FIs to do the same, to be prepared, in case FIs become increasingly interested in blended financing activities.**

During the Conference of the Parties of the UNFCCC (COP 27) in 2022, the NGFS launched a Blended Finance Initiative aimed at raising awareness about blended finance among central banks and financial regulators, with a focus on overcoming potential regulatory and implementation obstacles. CBJ will leverage this and similar initiatives to build capacity and raise awareness in Jordan.

104 Toronto Centre, “Blended Finance.”



**CBJ can also play an important role in systematic data and information collection that could inform development of blended finance products in Jordan, which could be coordinated by CBJ's Climate Change Risk and Green Finance Division.** Globally, supervisors are encouraged to take part in ensuring that financial reporting standards are in place and are being followed to obtain a clearer picture of the volumes of blended finance deals entering local markets. This is fully aligned with CBJ's objective in this strategy to address data gaps linked to green finance and climate risk management. Blended finance in Jordan can also benefit from the participation of Islamic social finance institutions like Waqf trusts and endowments that have significant amounts of funds for investment in Sharia-compliant instruments aimed at benefiting the wider society.

## Guidelines for integrating change mitigation and adaptation in public credit guarantee programs for SMEs

**In 2022, the World Bank Task Force on "Greening" Public Credit Guarantee Schemes (PCGSs) for SMEs issued guidelines providing key principles for enhancing climate responsiveness of PCGSs.** Figure 11.10 is a brief (streamlined) summary of the four categories that these guidelines are grouped into. In Jordan, these guidelines could be split into actions that JLGC could take to (a) integrate climate-related and environmental considerations into its institutional, strategic, and risk management framework and (b) integrate climate factors into guarantee programs (or launch a dedicated green guarantee program).

## Integration of climate-related and environmental aspects into PCGSs' framework for SMEs

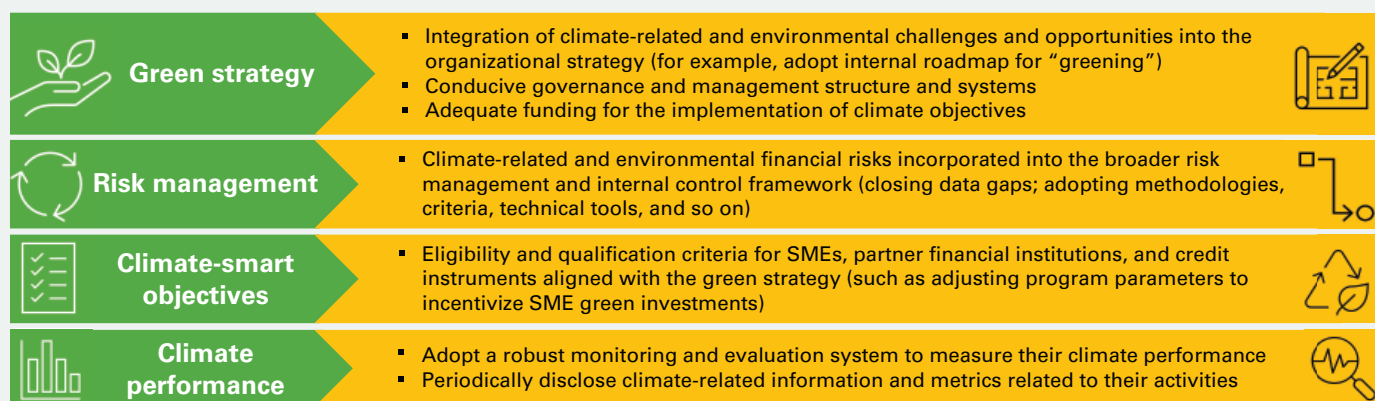
**COMMITTING TO GREEN STRATEGIES.** Under this category, PCGSs are encouraged to (a) integrate climate-related challenges and opportunities into their strategy; (b) set up a conducive governance and management structure that enables effective implementation of climate change considerations anchored in strategy and operations; and (c) ensure that adequate funding is in place for the implementation of climate-responsive objectives through the PCGS's strategy and operations. This area is mostly linked to incorporating climate-responsive aspects into the institutional and organizational layer of the PCGS, to set up all the foundational enablers.

**MANAGING CLIMATE-RELATED AND ENVIRONMENTAL RISKS.** Because the physical and transition effects of climate change can generate material financial risks to PCGSs, analyzing and estimating these types of risks should become an integral part of broader risk management and internal control frameworks. As with climate risk management for FIs, to be effectively engaged in this area PCGSs will need to work on addressing data gaps and developing and adopting methodologies, criteria, and technical tools for risk assessment, monitoring, and mitigating within the PCGS's portfolio.

**PROMOTING CLIMATE-SMART OBJECTIVES.** PCGSs are encouraged to make their programs more climate responsive—for example, by aligning eligibility and qualification criteria for SMEs, partner FIs, and credit instruments with the PCGS's green strategy—by adjusting their program parameters to incentivize SME investment toward climate-smart objectives. Guarantee coverage ratios, the pricing of guarantees, credit guarantee tenors, grace periods, and technical assistance are important steering mechanisms for PCGSs to determine the usage of their funding and contribute to the level of their income. For example, it would be important to link the eligibility criteria with a national green taxonomy, once it is adopted in Jordan. Also, certain qualification criteria could be adopted for selecting partner FIs, potentially with a focus on those complying with climate-related and environmental standards or having more "green" customers in their portfolios.

**ACCOUNTING FOR CLIMATE PERFORMANCE.** The key distinctive feature of green finance is that it is directly tied to certain climate-related and environmental objectives. Therefore, adopting a robust monitoring and evaluation system to measure PCGSs’ climate performance, as well as periodically disclosing climate-related information and metrics related to their activities, should be an integral part of greening the PCGSs.

**Figure 11.10: Key Components of the Guidelines for Integrating Change Mitigation and Adaptation in Public Credit Guarantee Schemes for Small and Medium Enterprises**



Source: Adapted from World Bank. 2022. “Guidelines for Integrating Climate Change Mitigation and Adaptation in Public Credit Guarantee Schemes for Small and Medium Enterprises.” Washington, DC: World Bank.

Note: SMEs = small and medium enterprises.



## SME credit guarantees

**MSMEs account for more than 98 percent of registered business enterprises in Jordan.** While individually smaller firms can have a minor impact on GHG emissions, the climate change mitigation and adaptation measures are highly relevant to MSMEs, as various climate effects can have significant impact on their competitiveness, resilience, and business viability in the medium and long term. Having access to green finance that supports MSMEs’ climate change adaptation and mitigation efforts becomes increasingly important. The capacity of SMEs to adopt sustainable practices and seize green business opportunities while adapting to climate change generally faces size-related constraints, including obstacles to accessing finance.<sup>105</sup> The preexisting barriers constraining access to conventional finance can be compounded by climate change effects and, as discussed previously, additional requirements linked to green credentials may add further challenges to MSMEs in accessing green financing. Enhancing access to green finance will often happen in parallel with ongoing financial sector policies that aim to increase the financial inclusion of underserved segments.

<sup>105</sup> World Bank, “Guidelines for Integrating Climate Change Mitigation and Adaptation in Public Credit Guarantee Schemes for Small and Medium Enterprises” (Task Force on Greening Public Credit Guarantee Schemes for SMEs, World Bank, Washington, DC, 2022), <https://documents1.worldbank.org/curated/en/099512111082215393/pdf/IDU0ef1c33d00fa6c04e180991a0e47a751befcb.pdf>

**Against this backdrop, credit guarantee programs can be a powerful tool in unlocking green financing for MSMEs.** The underlying idea is that green credit guarantee programs can kickstart lending in an early-stage green market by reducing uncertainty where FIs may perceive target groups as too risky.<sup>106</sup> Green credit guarantee programs can help address two characteristics of financing: supporting access to finance and targeting green economic outcomes. It is, however, important to be aware of what barriers in access to green finance these programs can and cannot address (figure 11.11).

**Figure 11.11: Challenges of Green Finance to MSMEs That Can and Cannot Be Addressed by Green Credit Guarantees**

 <b>Can be addressed by green credit guarantees</b>	 <b>Cannot be addressed by green credit guarantees</b>
<ul style="list-style-type: none"> <li>▪ Collateral eligibility</li> <li>▪ Borrower information asymmetries</li> <li>▪ Larger payback periods</li> <li>▪ Lack of technical know-how</li> </ul>	<ul style="list-style-type: none"> <li>▪ Uncertainties with green policies and regulatory environment</li> <li>▪ Lack of borrower awareness</li> <li>▪ Legal framework issues</li> <li>▪ Higher monitoring costs</li> </ul>

Source: Adapted from Alliance for Financial Inclusion (AFI), “Green Credit Guarantee Schemes for MSMEs” (Special Report, AFI, Kuala Lumpur, Malaysia, 2022), [https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs\\_260722.pdf](https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs_260722.pdf).  
 Note: MSMEs = micro, small, and medium enterprises.

## Integrating climate-related considerations into JLGC’s operations and programs

**JLGC plays a crucial role in Jordan’s financial ecosystem: its loan guarantee programs enhance access to finance for SMEs and it facilitates trade through targeted insurance programs.** JLGC has been an active guarantee provider in Jordan since 1994, and it was set up as a public shareholding company with the majority of shares held by CBJ. The JLGC’s capital base is around JD 30 million. JLGC’s programs can be grouped in two main categories: loan guarantees to SMEs and export and domestic sales insurance.

**JLGC’s efforts to mainstream climate considerations into its operational model and guarantee programs will be critical to greening the financial sector in Jordan.** Climate change is relevant to JLGC through both the risk and the opportunity perspective. On the risk side, climate change physical and transition factors can have a negative effect on the creditworthiness of SMEs that are beneficiaries of JLGC’s loan guarantees. Ultimately, this can lead to higher-than-expected guarantee payouts from JLGC to partner FIs. Similarly, under the export credit and domestic sales insurance programs, climate-related and environmental factors can have increasingly material impact on the risk profile of buyers of goods, especially in geographical locations most vulnerable to climate hazards or buyers who are in high risk of stranding owing to low-carbon transition policies. As such, CBJ will encourage and support JLGC to incorporate climate-related considerations into the strategic as well as operational model to ensure that climate risks are considered.

<sup>106</sup> Alliance for Financial Inclusion (AFI), “Green Credit Guarantee Schemes for MSMEs” (Special Report, AFI, Kuala Lumpur, Malaysia, 2022), [https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs\\_260722.pdf](https://www.afi-global.org/wp-content/uploads/2022/06/Green-credit-schemes-for-MSMEs_260722.pdf)



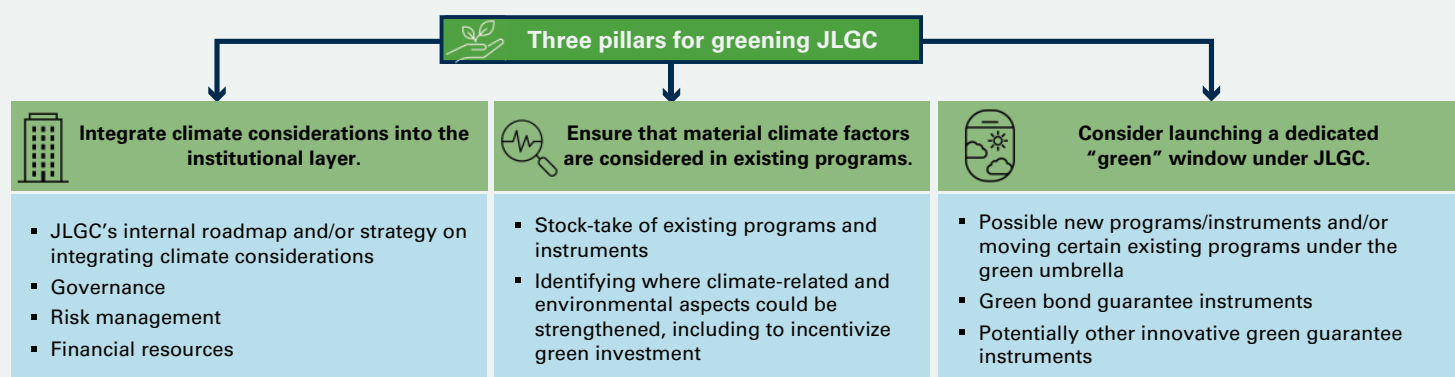
**On the opportunity side, JLGC can become one of the core enablers of green financing in Jordan.** As indicated previously, to certain customers, access to green finance can be even more challenging than access to conventional financing, due to factors such as the need to validate green credentials, untested green investment projects, and so forth. Some of the JLGC's programs already have a certain focus on renewable energy and energy efficiency purposes. For example, the Jordan Renewable Energy and Energy Efficiency Fund supports programs and financial mechanisms allowing renewable energy and energy efficiency projects to get financing from banks, which includes loan interest rate subsidies, revolving funds, financial risk mitigation, credit guarantees, and various investment subsidies. JLGC plays a role by supporting SMEs and larger corporates that participate in the program with credit guarantees. Borrowers receive loans at subsidized rates, while banks receive the benefit of JLGC's loan guarantees free of charge.

**In the medium and longer term, there is potential to expand the scope of JLGC's products to focus specifically on unlocking the green financing market, for example by providing financially sustainable guarantees for green bond issuance.** In general, if the scope of available green lending products expands over time, JLGC should align its green product offering with the green products and services offered by partner FIs. Also, when and if appropriate (including from JLGC's financial capacity perspective), JLGC could consider developing new products such as equity and quasi-equity guarantees to attract longer-term financing in riskier green projects or disaster-triggered guarantees to facilitate the prompt deployment of emergency finance to viable SMEs located in geographic locations hit by a climate-related natural disaster.

**Several important preconditions must be met for an effective greening of JLGC and its programs.** First, the presence of a national green taxonomy can significantly reduce the transaction cost of green credit guarantees, as it would make it more straightforward to classify and define eligible activities for green credit guarantees. Second, the climate disclosure framework (both for partner FIs and SMEs) could facilitate implementation of green credit guarantee programs because a systematic provision of climate-related information allows easier assessment of green performance and outcomes, as well as the risk-return profile of beneficiaries. However, the development and implementation of green guarantee program(s) should not necessarily wait until these conditions are established: for example, while the taxonomy is being developed, a green guarantee program could follow separate, temporary green classification principles, if possible, linked to existing national requirements.

**CBJ will encourage JLGC to engage, at the minimum, in the following three areas of greening its operational model and programs:** (a) integrating climate-related and environmental considerations into the broader institutional, governance, and risk management framework; (b) ensuring that material climate-related and environmental factors are considered in the existing JLGC's programs and instruments; and (c) after taking stock of JLGC's existing programs, CBJ will encourage launching a dedicated window for green guarantee instruments under JLGC (figure 11.12).

**Figure 11.12: Three Potential Action Areas for Greening JLGC**



Source: Original figure for this strategy.

Note: JLGC = Jordan Loan Guarantee Corporation.

## Objective: Facilitate development of green capital market instruments.

**Shifting to a low-carbon economy and enhancing resilience to climate shocks will require major investments across Jordan in infrastructure and adoption of innovative climate technology.** While banks are expected to provide a significant share of this funding, capital markets will become increasingly important in offering innovative tools to close the investment gap, especially for large-scale investments in the medium and long term (box 11.4). Capital market development will also be crucial to diversifying long-term financing sources.

### Box 11.4. Snapshot of Jordan's Capital Market

**The capital market in Jordan is still in the early stages of its development.** Market capitalization of listed shares at the Amman Stock Exchange reached US\$25.4 billion, accounting for 56 percent of gross domestic product (GDP) at the end of 2022. The financial sector (mainly banks, with 44 percent of total market capitalization) and the industrial sector (mainly mining and extraction, with 34 percent) constitute the largest market capitalization, accounting for 49 percent and 37 percent respectively of total market capitalization. The fixed income market is dominated by treasury bonds with a small percentage of corporate bonds (less than 5 percent; at present, public entities dominate the corporate bonds market.). Among the corporate bonds issued, the Jordan Mortgage Refinancing Company is the major issuer (more than 90 percent of total corporate issuance). The secondary market trading for bonds is not active; the average value of bonds traded during the year 2022 amounted to JD 22.3 million (US\$31.4 million). By the end of 2022, institutional investors owned 78 percent of the market value of securities deposited at the Securities Depository Center, including companies (58.6 percent of total securities value), institutions (12.3 percent), governments (5 percent), and mutual funds (less than 1 percent).

**The Social Security Investment Fund (SSIF) is a major investor in the capital market in Jordan.** Established in 2001, it began operations in the beginning of 2003. SSIF's bylaws and regulations that regulate the fund's financial, technical, and regulatory aspects are approved by the Investment Board of the fund and the Social Security Corporation Board of Directors. SSIF assets increased steadily over the last decade to reach JD 13.8 billion in 2022, and SSIF recorded an income of JD 685 million at the end of 2022. SSIF's bond portfolio represents the biggest investment of the fund at 55.6 percent, followed by equity investments which represented 18.1 percent at the end of 2022.

## Summary of the actual green and sustainable financing initiatives in Jordan's capital markets

**In December 2021, MOENV issued its Green Bond Guidelines, developed jointly with financial sector regulators (JSC and CBJ) and other government agencies, providing a high-level framework for corporate and sovereign green bond and sukuk issuance.** The green bond guidelines draw upon market best practices such as the Green Bond Principles developed by ICMA. The objective of these guidelines is to stimulate dialogue with private sector stakeholders interested in the green bond market.

**Amman Stock Exchange (ASE), a member of the Sustainable Stock Exchanges (SSE) Initiative, issued Guidance for Sustainability Reporting in 2018.**<sup>107</sup> The guidance listed 28 sustainability indicators for disclosing ESG performance, adapted from World Federation of Exchanges guidance and in line with the Global Reporting Initiative standards. According to the ASE announcement, the guidance will apply to all listed companies on the ASE. For the initial stage, listed companies on the ASE20 index are required to submit annual sustainability reports in 2022. ASE is also currently developing local guidance on climate-related disclosures. In 2022 the ASE amended the Guidance for Sustainability Reporting by adding some topics to the guidance and amending others to make it more comprehensive and in line with the latest developments in international standards. The amended version of the guidance recommends 30 indicators of sustainability related to the principles of environmental and social performance and corporate governance.

**The Social Security Investment Fund (SSIF) has developed its ESG framework and issued annual sustainability reports since 2020.** In 2021, SSIF invested in three solar power stations to offset the energy consumption of the hotels owned by the Social Security Corporation (SSC) and SSC headquarters and branches. Overall, given its size and importance in the local market, SSIF can become a significant player in the green finance market going forward.

**In March 2023, Jordan Kuwait Bank issued the first green bond in Jordan.** The size of the five-year bond issuance was US\$50 million, and it was a private placement with a majority investment from IFC. The proceeds will be earmarked for green projects and assets—including renewable energy projects, low-carbon vehicles, green infrastructure such as low-carbon transport, new energy-efficient green buildings, and sustainably managed water resources and waste (see also box 11.3).

## Leveraging capital markets for green finance mobilization in Jordan

**CBJ stands ready to cooperate (within its mandate) with JSC, MOF, and other authorities to enhance the climate responsiveness of capital markets and to leverage capital market tools for climate finance mobilization (figure 11.13).** In this regard, JSC, MOF, and MOENV are major partners of CBJ. At present, JSC is scoping out capital market development for the next five years. The program focuses on strengthening legal and regulatory frameworks and regulatory and supervisory capacity and improving capital markets infrastructure and

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<sup>107</sup> The SSE Initiative is a United Nations (UN) Partnership Programme organized by the UN Conference on Trade and Development, the UN Global Compact, the UN Environment Programme Finance Initiative, and the Principles for Responsible Investment. The SSE's mission is to provide a global platform for exploring how exchanges—in collaboration with investors, companies (issuers), regulators, policy makers, and relevant international organizations—can enhance performance on ESG issues and encourage sustainable investment, including the financing of the UN Sustainable Development Goals.



market conduct. In addition, the program aims to enhance asset managers' abilities and diversify market participants, investor base, and instruments. All these efforts are highly relevant to jump-starting the green investment market in Jordan, including the green bond and green equity markets.

**Targeted development efforts by all stakeholders (government agencies, financial sector regulatory authorities, FIs, and professional services) will be needed to expand and diversify green finance through capital market solutions that complement concessional and bank financing.** Considering the existence of large institutional investors (SSIF, corporates, and banks), active foreign participation in the domestic market, and untapped domestic savings, Jordan could potentially use capital markets to raise funds for green projects in the next five years with a strong government commitment to climate change targets and policy support for green investment. Green bonds/sukuk could be the first, most realistic instrument to mobilize private capital through the capital market in this context, as evidenced by the issuance of the first corporate green bond in Jordan in 2023. While the Green Bond Guidelines are in place, detailed regulations on green bond and sukuk issuance are yet to be developed (mostly by JSC) to specify issuance procedures, qualification criteria, use of proceeds, disclosure, reporting, and so forth, and CBJ is open to supporting JSC in developing the respective regulatory and supervisory guidance. At the same time, CBJ will conduct market dialogues with FIs to sensitize them about the opportunities of issuing corporate green bonds in Jordan as one of the options to attract funding for green financing.

**There is an emerging interest in Islamic financing instruments by both domestic and international investors for sustainable development projects.** Jordan can tap into a significant pool of liquidity looking for Sharia-compliant investment options available both domestically and in the regional capital markets and by leveraging the potential of green sukuk for financing green projects. International good practices are well established with successful country examples such as Indonesia, Malaysia, and Türkiye, having a dual system (coexisting conventional and Islamic finance) with the respective Islamic finance regulation and supervisory frameworks in place. As discussed in more details in chapter 10, effective development of green and sustainable Islamic finance in Jordan requires implementing broader preconditions, and in particular, standardized green sukuk structures that can be employed off-the-shelf.

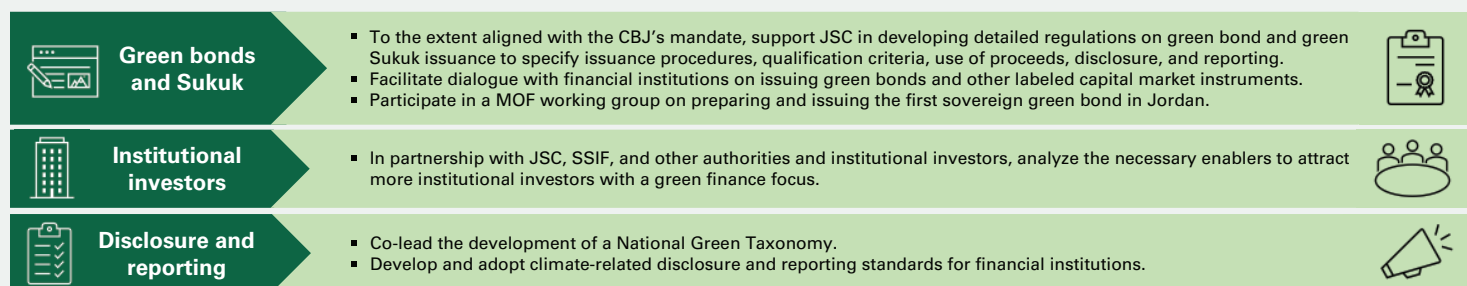
**Considering that the local bond market is dominated by public sector entities, it will be important for the government of Jordan to share the list of major infrastructure projects** in priority sectors that meet the minimum green project criteria with the public to attract private investors. MOF is interested in establishing a sovereign green bond program, which would be used to finance eligible green investments and expenditures. The World Bank–financed Jordan Inclusive, Transparent, and Climate Responsive Investments Program for Results includes the preparation of a sovereign green bond as one of the result indicators (along with the development and adoption of a national green taxonomy). Issuance of the sovereign green bond can facilitate the development of the corporate green bond market by setting a reference price and yield curve for the overall Jordan green bond market. This would lead to increased participation of private sector and long-term institutional investors in projects that can support the government of Jordan's low-carbon climate-resilient development pathway, as defined in its NDC goals. CBJ is open to joining the interinstitutional working group, once it is established, for the preparation and issuance of the sovereign green bond.

**To diversify the investor base for green finance markets, it will be important for JSC and other authorities to review the current financial sector regulations to simplify procedures (with the support of technology) and identify appropriate incentives to reduce the cost for both issuers and investors for qualified green projects.**

Moreover, targeted efforts can be made to tap into new investors for green finance—for example, domestic retail investors with large sums of savings looking for investment products (both short-term and long-term). Domestic savings in Jordan are largely untapped. Authorities would need to develop relevant policies and incentives for retail investors’ participation in the green finance market. A systematic analysis of potential new investors in green asset classes could be commissioned to better understand their investment appetite and preferences.

**Clear guidelines and transparent supervision on disclosure and reporting for green financing will contribute to healthy market development.** In this regard, as discussed in previous sections and in chapter 8, CBJ will contribute to the development of financial sector climate-related reporting and disclosure standards.

**Figure 11.13: CBJ’s Engagement in Partnerships to Facilitate the Development of Green Capital Market Instruments**



Source: Original figure for this strategy.

Note: CBJ = Central Bank of Jordan; JSC = Jordan Securities Commission; MOF = Ministry of Finance; SSIF = Social Security Investment Fund

## Objective: Initiate a National Green Finance Platform or Task Force to facilitate coordination of green finance mobilization efforts

**As discussed in chapter 4, having a national green finance platform or task force would be important to ensure smooth coordination of different green finance mobilization activities in Jordan.** CBJ will initiate discussions with different authorities in Jordan to explore the possibility of such a platform or task force. It would be important to avoid duplication with existing structures—for example, the National Climate Change Committee. The differentiating featuring of this platform would be that it would focus specifically on green finance issues and on related capacity building activities across different authorities.

## Objective: Explore green refinancing facilities to kick-start the green finance market

**To stimulate growth of the green finance market in its initial stages of development, national authorities in Jordan may explore partnerships with international institutions to establish new or to scale up existing green finance facilities to be implemented through FIs to support achievement of material climate-related and environmental outcomes.** This could be a temporary enabler until the green finance market takes off, with a clear phase-out plan to avoid market distortions. It could help develop success stories and good practices to be leveraged by the financial and private sector going forward through commercial financing. Today green projects are still a relatively new asset class, in many cases requiring higher upfront investment and specific technical capacity from FIs to assess project's risk and return profile. This can make FIs hesitant to finance green projects, especially if the financing entails more innovative and complex structures, which can also lead to a higher cost of capital. This is not unique to Jordan, and there are examples in other Middle East and North Africa countries where, for example, development finance institutions provide lower-interest-rate credit lines, typically combined with technical assistance provided by specialized entities to FIs and end-beneficiaries to enhance the impact. To ensure sustainability of any potential (or existing) green financing facilities in Jordan, CBJ will work with JLGC on enhancing JLGC's operational model and on scaling up credit guarantee programs.

**What proved to be a success factor of similar programs in other countries was integrating an incentive payment element.** In that case, when a beneficiary achieves agreed-upon green performance outcomes (for example, increased energy efficiency; implementation of energy audits), there can be an ex post grant to reimburse part of the investment financed by the green finance program. There are lessons learned from similar programs in neighboring countries, such as Egypt and Morocco. A similar model is currently applied by the EU-EBRD program in Jordan. In 2021, the EBRD and the EU launched the Green Financing Facility, which combines commercial loans from the EBRD, concessional loans from the Green Climate Fund, and grant funding by the EU. The facility helps Jordan's businesses invest in high-performing technologies by providing financing through local participating FIs. It also entails technical assistance for partner FIs and end clients.

**It would be important for authorities to take the necessary steps to ensure that the potential green refinancing programs are effective and to avoid any duplication with, or ideally to leverage, existing initiatives in Jordan.** Given that some existing development finance initiatives in Jordan already entail green finance components, a holistic stocktake of existing programs should be conducted, including efforts to avoid fragmentation and duplication and to design the concessional green refinancing program to be coordinated and synergized with other initiatives. Also, the design and parameters (tenors, grace periods, interest rates, and so forth) of this program should be carefully calibrated to ensure both a sufficiently high uptake of the program and material climate-related and environmental outcomes. Authorities should also consider developing and offering Sharia-compliant versions of such refinancing programs to support the participation of Islamic banks and other Islamic FIs in green finance initiatives.



## 11.4 INTEGRATE CLIMATE-RELATED CONSIDERATIONS INTO CBJ'S OTHER ACTIVITIES AND MANDATES

**Increasingly, more central banks and financial regulators are incorporating climate-related and environmental considerations into other institutional actions beyond the prudential mandate.** The following sections discuss potential areas for CBJ to expand its climate-related and environmental activities within the broader CBJ mandate.

### Objective: Add climate-related considerations to CBJ's reserve management policies

**Central banks are typically entrusted with managing large assets and investment portfolios to fulfill their mandate of maintaining monetary stability and other policy objectives.** These objectives are usually anchored in preserving liquidity and exchange rate stability, which in Jordan is mostly focused on the fixed exchange rate system with the US dollar. Central banks' frameworks for managing foreign reserves have traditionally balanced a triad of objectives: liquidity, safety, and return. Pursuing these objectives involves explicit trade-offs. More of an emphasis on returns, for instance, may require central banks to sacrifice some of the safety and liquidity of their overall holdings. Most recently, central banks have shown significant interest in incorporating environmental and climate-related sustainability considerations into their policy frameworks, including their reserve management.<sup>108</sup>

**According to a 2020 BIS survey, which covered more than 100 reserve managers and official institutions, there is significant interest in integrating sustainability considerations into reserve management strategies.**<sup>109</sup>

Even though the number of reserve managers who have already integrated sustainability considerations is not very large, over half of the institutions in the sample consider there to be scope for including sustainability as a fourth reserve management objective, in addition to liquidity, safety, and return, without necessarily adjusting the core mandates and, hence, the stated uses of the reserve. The following are the most frequently mentioned tools considered for integration of sustainability considerations into reserve management: investing in instruments issued for sustainable purposes such as green bonds (more than 70 percent of respondents); using metrics such as ESG criteria and ratings to inform investment decision-making (almost 50 percent); and integrating notions of climate risk in the central bank's investment beliefs (more than 30 percent).

**The NGFS, in its pioneer guide on sustainable and responsible investing (SRI) in central banks' portfolio management, identifies two high-level SRI objectives for central bank portfolios:**<sup>110</sup> (a) a financial SRI objective that aims to address the impact of climate-related risks and ESG-related risks on the portfolio and (b) an extrafinancial SRI objective that aims to address the impact of the portfolio on the environment and society,

108 Ingo Fender et al., "Reserve Management and Sustainability: The Case for Green Bonds?" (BIS Working Paper 849, Bank for International Settlements, Basel, Switzerland, 2020), <https://www.bis.org/publ/work849.pdf>.

109 Fender et al., "Reserve Management and Sustainability."

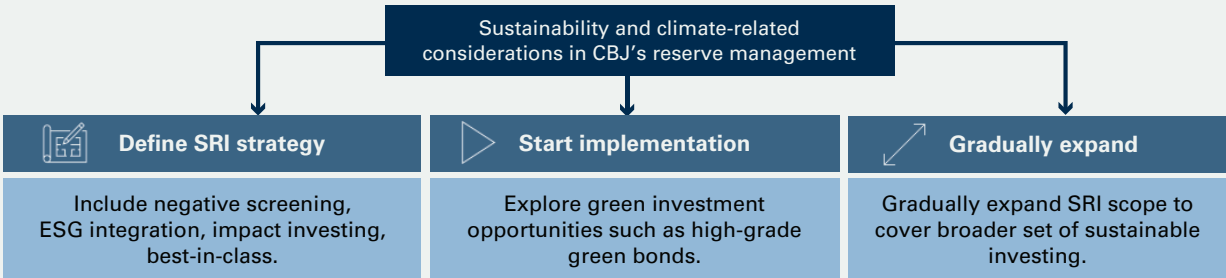
110 Network for Greening Financial Systems (NGFS), "A Sustainable and Responsible Investment Guide for Central Banks' Portfolio Management" (NGFS Technical document, NGFS, 2019), <https://www.ngfs.net/sites/default/files/medias/documents/ngfs-a-sustainable-and-responsible-investment-guide.pdf>.

alongside financial returns. These objectives are increasingly likely to overlap as adaptation and mitigation policies evolve in response to climate change. NGFS conducted a survey that covered 40 member central banks, out of which 88 percent have integrated, or were considering integrating, SRI practices into one or more of their portfolios. The NGFS survey shows that 31 out of 40 surveyed central banks have a broad ESG approach, while 17 banks employ a climate-specific focus.<sup>111</sup>

**CBJ is responsible for implementing investment strategies to ensure Jordan’s foreign exchange reserves’ safety, liquidity, and profitability, as these reserves constitute a cornerstone in the stability of the Jordanian dinar exchange rate.** To fulfil this task, CBJ adopts a flexible investment policy that is compatible with the ongoing developments in foreign exchange and international financial markets. In May 2023, CBJ’s gross foreign reserves stood at more than JD 12 billion, with around JD 3 billion in the form of bonds and treasury bills; JD 6.5 billion in cash and deposits; and so forth.

**CBJ will consider gradually introducing sustainability aspects and adopt SRI principles and objectives without prejudice to the core mandate for reserve management** (figure 11.14). However, the scope and specific SRI strategy (negative screening; ESG integration; impact investing; best-in-class; voting and engagement; and so forth) are yet to be discussed, following international recommendations and local circumstances. Most likely, an initial step taken by CBJ will be in the risk management area. For example, CBJ may consider tilting the reserve portfolio toward assets less exposed to potential long-term financial losses arising from climate-related and environmental risks, which can include investing in high-grade debt instruments (which is the core of its reserve portfolio) such as green bonds. Any more material integration of sustainability or climate-related and environmental considerations into reserve management would be reflected in CBJ’s investment and risk management policies.

**Figure 11.14: CBJ’s Approach for Integrating Sustainability and Climate-Related Considerations into Reserve Management**



Source: Original figure for this strategy.  
 Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance; SRI = sustainable and responsible investing.

111 Network for Greening Financial Systems (NGFS), “Progress report on the implementation of sustainable and responsible investment practices in central banks’ portfolio management,” December 2020, [https://www.ngfs.net/sites/default/files/medias/documents/sri\\_progress\\_report\\_2020.pdf](https://www.ngfs.net/sites/default/files/medias/documents/sri_progress_report_2020.pdf).

## Objective: Integrate climate-related considerations into the monetary policy framework

**Climate change affects key macroeconomic variables and can undermine monetary policy transmission, requiring central banks to integrate climate-related factors into their broader analytical toolkit for monetary policy formation.** More frequent and more severe supply and demand shocks caused by climate-related factors will present a challenge to monetary policy formulation. For example, drought (which is a climate hazard highly relevant to Jordan) was estimated to have the highest overall positive effect on inflation, reflected in rising food prices.<sup>112</sup> Climate change can affect key macrovariables in various ways. For example, longer-term impact on food and energy prices may affect inflation expectations (due to reciprocal causality between these two variables), and places where it becomes less desirable to work due to higher temperatures may experience a reduction in labor supply in exposed industries such as construction and agriculture.<sup>113</sup>

**Central banks are encouraged to conduct further in-depth analyses of the impact of climate change on monetary policy transmission;** to assess the implications for risk management practices, as climate-related shocks may affect the riskiness of their financial portfolios and market operations; and to embrace an interdisciplinary approach to researching the effects of climate change and how best to reflect climate factors in macroeconomic models.<sup>114</sup> In 2020, NGFS conducted a survey of central banks on monetary policy operations and climate change. The results showed that the large majority of central banks think that climate change could affect monetary policy transmission; also, the majority of central banks see scope for adjusting their operational frameworks to reflect climate-related risks. However, the implementation of specific measures is still at an early stage.

**Given that research on climate change and monetary policy interconnection is still evolving, one of the main initial steps by CBJ will be to explore how best to integrate climate-related factors into the macroeconomic modeling that informs monetary policy formation.** This will be linked with CBJ's efforts to address data gaps; conduct climate risk assessments; and adjust existing and develop new models to inform CBJ's decision-making in monetary policy, financial stability, and other areas.

**In the medium and long term, once the evidence base is well-developed, CBJ will explore the possibility of explicitly integrating climate-related measures into CBJ's monetary policy toolkit.** NGFS has provided a list of potential entry points for adjusting a monetary policy operational framework to climate-related risks (Figure 11.15). For example, when it comes to credit operations, central banks can make access to some lending facilities conditional on a counterparty's disclosure of climate-related information or on its carbon-intensive, low-carbon, and green investments. Another option is to make the interest rate for central bank lending facilities conditional on the extent that a counterparty's lending (relative to a relevant benchmark) is contributing to climate change mitigation and the extent to which the counterparty is decarbonizing its business model. For example, the People's Bank of China decided to utilize green collaterals and green bonds in its open market repurchase operations.<sup>115</sup>

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112 Alain Kabundi, Montfort Mlachila, and Jiaxiang Yao, "How Persistent Are Climate-Related Price Shocks? Implications for Monetary Policy" (IMF Working Paper 22/207, International Monetary Fund, Washington, DC, 2022), <https://www.imf.org/en/Publications/WP/Issues/2022/10/28/How-Persistent-are-Climate-Related-Price-Shocks-Implications-for-Monetary-Policy-525048>.

113 Network for Greening Financial Systems (NGFS), "Climate Change and Monetary Policy: Initial Takeaways" (NGFS Technical document, NGFS, 2020), [https://www.ngfs.net/sites/default/files/medias/documents/climate\\_change\\_and\\_monetary\\_policy.pdf](https://www.ngfs.net/sites/default/files/medias/documents/climate_change_and_monetary_policy.pdf).

114 NGFS, "Climate Change and Monetary Policy."

115 Macaire Camille and Naef Alain, "Greening Monetary Policy: Evidence from the People's Bank of China" (Working Paper Series 812, Banque de France, Paris, 2021), <https://publications.banque-france.fr/en/greening-monetary-policy-evidence-peoples-bank-china>.



**CBJ’s current monetary policy operational framework is anchored in the “corridor system.”** This system consists of an overnight deposit interest rate and an overnight repurchase agreement interest rate. Banks deposit their surpluses with CBJ at the deposit interest rate, and in case they need liquidity, they borrow from CBJ through overnight repurchase agreements to cover their liquidity financing needs. Monetary policy tools available to CBJ to regulate credit include open market operations, the reserve requirement ratio, and the discount rate. In the future, there might be several entry points for CBJ to consider integration of climate-related considerations into the monetary policy operational framework. However, the key precondition would be that it does not undermine the operational ability to achieve core objectives and targets of monetary policy. CBJ sees the reflection of climate-related aspects into monetary policy activity only as a potential long-term consideration.

**Figure 11.15: Selected Options for Adjusting Central Banks’ Operational Frameworks to Climate-Related Risks**

CREDIT OPERATIONS	
<b>Adjust pricing to reflect counterparties’ climate-related lending.</b> 	Make the interest rate for central bank lending facilities conditional on the extent to which a counterparty’s lending (relative to a relevant benchmark) contributes to climate change mitigation and/or the extent to which they are decarbonizing their business model.
<b>Adjust pricing to reflect the composition of pledged collateral.</b> 	Make the interest rate for central bank lending facilities conditional on the extent to which a counterparty’s lending (relative to a relevant benchmark) contributes to climate change mitigation and/or the extent to which they are decarbonizing their business model.
<b>Adjust counterparties’ eligibility.</b> 	Make the interest rate for central bank lending facilities conditional on the extent to which a counterparty’s lending (relative to a relevant benchmark) contributes to climate change mitigation and/or the extent to which they are decarbonizing their business model.
COLLATERAL	
<b>Adjust haircuts.</b> 	Adjust haircuts to better account for climate-related risks. Haircuts could also be calibrated such that they go beyond what might be required from a purely risk-mitigation perspective in order to incentivize the market for sustainable assets.
<b>Use negative screening.</b> 	Exclude otherwise eligible collateral assets on the basis of issuer-level climate-related risk profiles for debt securities or on the analysis of the carbon performance of underlying assets for pledged pools of loans or securitized products. This could be done in different ways, such as adjusting eligibility requirements, tightening risk tolerance, and introducing tighter or specific mobilization rules.
<b>Use positive screening.</b> 	Accept sustainable collateral so as to incentivize banks to lend or capital markets to fund projects and assets that support environmentally friendly activities (such as green bonds or sustainability-linked assets). This could be done in different ways, including adjusting eligibility requirements, increasing risk tolerance on a limited scale, relaxing some mobilization rules, and so on.
<b>Align collateral pools with a climate-related objective.</b> 	Require counterparties to pledge collateral such that it complies with a climate-related metric at an aggregate pool level.
ASSET PURCHASES	
<b>Make tilt purchases.</b> 	Skew asset purchases according to climate-related risks and/or criteria applied at the issuer or asset level.
<b>Use negative screening.</b> 	Exclude some assets or issuers from purchases if they fail to meet climate-related criteria.

Source: Network for Greening Financial Systems” (NGFS). 2021. “Adapting Central Bank Operations to a Hotter World: Reviewing Some Options.” NGFS Technical Document, NGFS. Page 5.

## 11.5 PRICING CARBON AND MONETIZE EMISSION REDUCTIONS FROM CARBON FINANCE OR RESULTS-BASED CLIMATE FINANCE

**It is widely acknowledged that introducing a price on carbon represents a crucial precondition for filling the current gap in low-carbon investment.** Carbon pricing is a key element within the broader spectrum of mitigation policies, which includes public investment (for example, renewable energy; low-emission public transport); regulatory policies (for example, reform of the energy sector; energy efficiency standards); and carbon pricing (for example, carbon tax; emission trading system). It is estimated that globally about 25 percent of total emissions are currently covered by carbon pricing schemes.

**When it comes to carbon pricing specifically, CBJ may have a limited role in this area, and key decisions should be made by the government of Jordan.** However, one of the options is for CBJ to act as a trusted adviser to the government on economic and financial affairs, to highlight the need for carbon pricing as one of the most effective tools to price climate externalities. It is important to note that this section mostly focuses on results-based climate financing (and to a lesser extent carbon markets), which is a subset of a broader theme of carbon pricing. This includes consideration of impacts of such carbon pricing policies, if introduced, on financial stability through appropriate scenario analysis.

**Voluntary carbon markets (VCMs) are still small but are developing fast in emerging markets and developing economies, and one of the trends is that VCMs become increasingly relevant for financial supervisors and regulators,** given a growing involvement of financial sector entities (banks and asset managers) as financiers of projects whose financial viability is dependent on the generation of carbon credits that will be monetized in carbon markets. This is creating new potential risks as well as promising opportunities to finance decarbonization. On the side of risks, it is important that there are frameworks ensuring both the environmental integrity and financial integrity of carbon credits. This includes clarity on the side of the government on how they would like VCMs to develop in the country. If financing is provided by banks and asset managers ahead of the generation of carbon credits, financial entities need to be able to assess and manage the risk of delivery of carbon credits. Additionally, there needs to be a framework that supports the registry and transfer of ownership on carbon credits, as well as other features such as their accounting and tax treatment. Some of these features are supported by the international ecosystem, but these are not sufficiently robust in all relevant aspects and need to be backed by domestic frameworks and regulations. For example, it is up to national authorities to define the legal nature of carbon credits and how credits are accounted for on the balance sheets of the financial sector. Clarity on the VCM domestic framework would give certainty to the private sector (project developers and financiers), opening up a new source of financing for decarbonation projects that would otherwise not be affordable.

## Valuing Emission Reductions

**As developing countries undertake more low-carbon projects and policies as part of their NDC implementation and as an effort to improve competitiveness and realize local benefits such as reduced air pollution, they have an opportunity to monetize the emission reductions that result.** The money that pays for, or monetizes, the emission reduction can come from two primary sources:

- **CARBON MARKETS.** These markets consist of both the voluntary and compliance carbon markets and entail the purchase of an emission reduction asset that is transferred out of the country.<sup>116</sup> Money that is paid for emission reductions via the carbon market is generally referred to as “carbon finance.”
- **RESULTS-BASED CLIMATE FINANCE (RBCF).** RBCF consists of compensation or rewards for the emission reductions generated by a project or policy. No emission reductions are transferred out of the country.<sup>117</sup>

The rest of this section primarily addresses the process by which CBJ, in partnership with other authorities, could tap RBCF. However, many of the processes to tap carbon markets are similar and both should be considered as avenues to monetize emission reductions.

**Emission reductions occur when a low-carbon project (for example, a solar plant) or policy (for example, subsidy removal or greening the financial sector policy) creates less emissions than a business-as-usual alternative.** Once properly verified, countries can receive compensation for each ton of carbon dioxide (CO<sub>2</sub>) that is abated. An emission reduction credit (ERC) represents a standard unit to measure an emission reduction equivalent to 1 metric ton of carbon dioxide (tCO<sub>2</sub>e). The term *emission reduction credit* is synonymous with other perhaps-familiar terms like carbon credit and emission reduction (ER), in that each describes a unit of quantified climate mitigation (that is, tCO<sub>2</sub>e). ERCs can arise from either the avoidance or removal of emissions. An example of an avoidance would be replacing carbon-intensive energy sources with renewable energy, while an example of a removal would be sequestering carbon from the atmosphere by planting trees.

**One of the prerequisites for carbon finance or RBCF is that the ultimate impact of the policy (or project) is generating emission reduction at scale, and this reduction should be measurable and trackable.** There are many possible approaches of crediting and verifying emission reductions (Figure 11.16). For example, while ERs can be verified on a project-by-project level (for example, a standalone renewable energy plant), they can also be verified from a larger number of similar projects (mini-grids and so forth), as well as from policy interventions (subsidy reform, green finance policies) or sectoral reforms leading to emission reductions (solid waste sector reform).






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116 Voluntary carbon markets involve companies that willingly (that is, voluntarily) agree to an emissions target and are seeking to purchase emission reduction credits to minimize the emission reduction they themselves have to make. Compliance markets involve countries that are required to reduce emissions and seek to purchase emission reduction credits to minimize the emission reduction they themselves have to make.

117 The primary source of RBCF to reward projects and policies that reduce emissions are dedicated World Bank trust funds, such as the Scaling Climate Ambition by Lowering Emissions (SCALE) partnership.



**Figure 11.16: Different Approaches to Verifying Emission Reductions**

Crediting approach	Objective	Methodological requirements	Examples
<b>Project-by-project</b> 	<ul style="list-style-type: none"> <li>Support individual investment projects</li> </ul>	<ul style="list-style-type: none"> <li>Baselines and MRV based on technology</li> </ul>	<ul style="list-style-type: none"> <li>Stand-alone renewable energy plant or large-scale landfill</li> </ul>
<b>Programmatic</b> 	<ul style="list-style-type: none"> <li>Support a larger number of similar projects, often small and micro scale, within a program.</li> </ul>	<ul style="list-style-type: none"> <li>Baselines and MRV typically based on technology. Often accompanied by an incentive program that transforms ER revenues into other incentive payments</li> </ul>	<ul style="list-style-type: none"> <li>Mini-grids, mini-hydro, vehicle fleet upgrades to electric vehicles</li> </ul>
<b>Policy</b> 	<ul style="list-style-type: none"> <li>Support a policy intervention such as an energy efficiency standard or energy/carbon pricing policies.</li> </ul>	<ul style="list-style-type: none"> <li>Baselines and MRV typically based on economic modeling</li> </ul>	<ul style="list-style-type: none"> <li>Subsidy (energy, agriculture, and so on) reform, carbon tax, energy efficiency standards</li> </ul>
<b>Sectoral</b> 	<ul style="list-style-type: none"> <li>Support overachievement of sectoral mitigation benchmarks/targets.</li> </ul>	<ul style="list-style-type: none"> <li>Sectoral baseline and MRV.</li> <li>Crediting on an aggregate subsector/sector level</li> </ul>	<ul style="list-style-type: none"> <li>Solid waste sector reform</li> <li>Industrial sector energy efficiency</li> </ul>
<b>Jurisdictional</b> 	<ul style="list-style-type: none"> <li>Support overachievement of jurisdictional mitigation benchmarks/reference levels.</li> </ul>	<ul style="list-style-type: none"> <li>Jurisdictional baseline and MRV</li> <li>Crediting on an aggregate level</li> </ul>	<ul style="list-style-type: none"> <li>Multisectoral emission reductions program for a city or group of cities</li> </ul>

Source: Original figure for this strategy.

Note: ER = emission reduction; EV = electric vehicle; MRV = monitoring, reporting, and verification.

**The policy or project should have a clear framework to quantify the emission reduction credits.** For an ERC project, the methodological framework should set out one or both of the following: (a) the business-as-usual emissions trajectory for the economy or sector in the absence of the ERC activities and (b) the crediting threshold, which is the trajectory (usually with emissions below the baseline) against which ERCs would be generated. The methodological framework then projects the actual emissions in the scenario where the climate policy or project is undertaken and the difference between these two gives the number of ERs that can then be credited.

**In the project or policy preparation phase, all the parties begin to negotiate the contract that will govern the creation, compensation, and use of the ERCs.** The contract is called the emission reductions purchase agreement and covers the agreed-upon crediting approach, the methodological framework, the price paid per ton of CO<sub>2</sub> emission reduced, and other factors.<sup>118</sup> The key task during the implementation phase has to do with annual

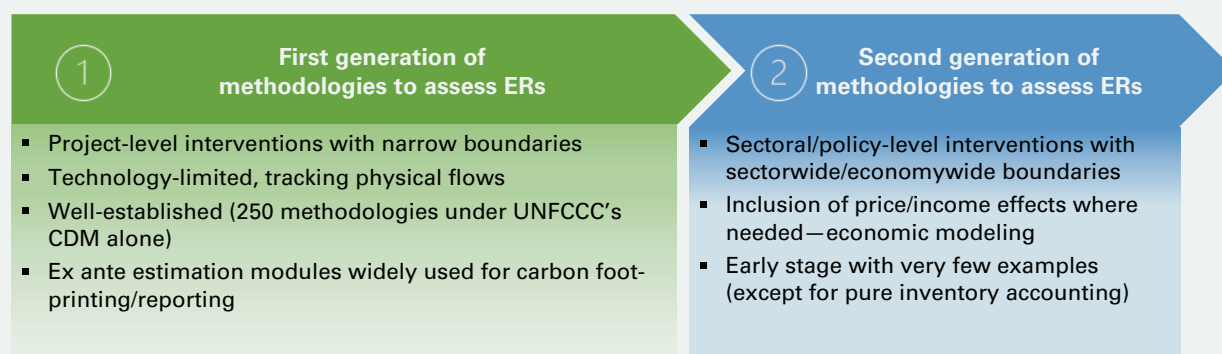
<sup>118</sup> The specific terminology of the emission reductions purchase agreement reflects the process involved with RBCF. Similar processes are involved with carbon markets.

monitoring, reporting, and verification (MRV): (a) monitoring involves the collection of data; (b) reporting involves compiling these data into documentation; and (c) verification takes place (usually annually) when an independent third party reviews the documentation and confirms the activities have taken place in accordance with the crediting approach, standard, or methodological framework agreed upon. The final stage of a project relates to the actual use of the ERs. A key consideration is whether the ERC is transferred from the host country or company to a buying country or company, or whether it is retained by the host country for use against its own NDC targets.

## RBCF as a Tool for Greening the Financial Sector

**Traditionally, ER monetization was done within the context of the Kyoto Protocol’s Clean Development Mechanism and mainly targeted infrastructure projects such as solar plants.** More recent usages of RBCF have expanded to include policy interventions that reduce emissions. This transition is easily seen in the differences between the first and second generation of methodologies to assess emission reductions (figure 11.17).

**Figure 11.17: First- and Second-Generation Methodologies to Assess Emission Reductions for RBCF**



Source: Original figure for this strategy.

Note: CDM = Clean Development Mechanism; ERs = emission reductions; UNFCCC = United Nations Framework Convention on Climate Change.

**Monetization of ERs to support greening the financial sector fits in very well with the second generation of ER methodologies.** However, greening the financial sector is a relatively new area of climate change mitigation compared to, for example, building renewable energy. The application of carbon finance or RBCF to greening the financial sector is also new. Because of that, organizations should take care in approaching and designing such projects and manage expectations.

**Both carbon finance and RBCF are well-suited to compensate ERs that come from actions taken to green countries’ financial sector because, unlike ERs that result from green infrastructure projects such as a wind farm, little upfront capital is required.** RBCF is suitable for greening financial sectors since many of the actions to do so involve policies that are easily reversed. Because payments are made only if the emission reductions are made, the RBCF guards against policy reversal.

**When assessing whether a public intervention to green the financial sector is suitable for carbon finance or RBCF, two considerations must be weighed:**

- **CREDITING POTENTIAL.** The supported intervention must be expected to result in a sufficiently large volume of emission reductions in the real economy in a reasonable timeframe.
- **INSTRUMENT RATIONALE.** Providing carbon finance or RBCF to a financial sector actor is the best use of funds under existing country-specific circumstances. For example, in the case of a program that supports soft loans to households for energy efficiency retrofits, it would be more efficient to direct the RBCF payments to the commercial entity supplying these loans than to individual households.

**In relation to crediting potential, it is useful to distinguish the following primary impact channels through which financial sector activities can reduce or avoid emissions in the real economy:**

- Increases in green-lending capacities, leading to increases in actual green-lending volumes (not just at an individual institution level, but across the whole economy);
- Decreases in high-carbon lending capacities, leading to declines in actual high-carbon lending volumes (across the whole economy); increases in financing costs of high-carbon investments;
- Decreases in financing costs of clean investments; and

Indirect effects, such as acceleration of green finance innovation, increase in knowledge, motivational effects due to adoption of green-lending targets, and so forth.

**Both carbon finance and RBCF could be powerful tools to facilitate greening the financial sector in Jordan.**

As a first step, CBJ will consider developing an internal road map or policy to set out the main principles of CBJ's level and type of engagement in RBCF activities in Jordan. The overarching principle is that CBJ will aim to screen each policy and regulation under this strategy to assess its potential to mobilize RBCF. In addition, since RBCF is a broad concept that may work more efficiently with larger-scale initiatives, CBJ will consider initiating a memorandum of understanding or similar agreement with the MOF, MOENV, and possibly other authorities, to agree on the terms of cooperation and coordination in the RBCF area. CBJ will also develop and issue guidelines for financial sector participants explaining the core mechanisms behind RBCF and how banks, MFIs, insurers, or other FIs in Jordan could engage in RBCF.

**Some of the initiatives discussed in this strategy are potentially strong candidates for ER monetization.**

For example, the Green Credit Guarantee Scheme under JLGC, depending on its scale, could generate significant emission reductions (on a portfolio level), which could be eligible for carbon finance or RBCF payments. This program should then be linked to Jordan's MRV, to monitor, report, and verify the emission reductions from the green guarantee program. Specialized green relending facilities are another option for consideration, especially if it will be connected to JLGC's green guarantee program. The next section provides some detailed practical examples on how ER monetization could be used for greening the financial sector in Jordan.

**An essential step to monetizing emission reductions from green finance actions is to fully operationalize the MRV system and related capacity.**

As the MRV system in Jordan is owned by the MOENV, CBJ could work with the MOENV to establish and build capabilities that relate to MRV for green finance, especially linked to potential FIs' contribution with data reporting to MRV. Doing so would not only aid in ER monetization but would also enable CBJ to more accurately predict beforehand and calculate afterwards the impacts of different green finance actions on Jordan's emission trajectory.



## RBCF Use Case for Greening the Financial Sector: Portfolio Rewards to Commercial Banks

**This case assumes the use of carbon finance or RBCF payments to incentivize commercial banks to shift their lending portfolios over time toward clean investments.** The basic idea of portfolio rewards for commercial lenders is to *provide a results-based payment to achieve a portfolio-level green lending target*. For example, a commercial bank commits to increasing the share of loans for green projects in its overall lending portfolio from the current 10 percent to 25 percent over the next five years. If the target of 25 percent is achieved, carbon finance or RBCF could pay the bank a monetary reward. Alternatively, those funding sources could pay a certain amount for each percentage point the green lending exceeds 25 percent. In principle, such programs could be combined with penalties for underachieving the portfolio target, but that would require additional policy action.<sup>119</sup> As a general note, when incentivizing a shift in lending portfolios, it is important to carefully manage potential unintended effects that could lead to a mismanagement of credit risk, inadequate pricing, corporate greenwashing, and financial instability.

**Such portfolio reward (or penalty) programs are different from subsidizing individual loans (or loan programs) for specific green investment projects.** First, the payment is against a portfolio achievement, which can only be reached by increasing green lending *relative* to high-carbon lending. Second, the receiving bank is entirely free to use the payment for whatever purpose it prefers. The funding is not earmarked for any further climate action or any other defined purpose. As both carbon finance and RBCF exclusively use verified emission reductions as the disbursement indicator, green lending targets would need to be determined by lowering the carbon footprint of the overall lending portfolio of a commercial bank. While the determination of the carbon footprint of a portfolio of investment projects is a standard exercise in greenhouse gas accounting,<sup>120</sup> it is much more challenging to assess whether or not the (over)achievement of a bank's portfolio target did indeed result in an economywide emission reduction. Bank A could have achieved its target by, for example, merely trading loans with Bank B that does not have a green lending portfolio target. Further criteria are needed to determine the extent to which a real emission reduction occurred.

**Alternatively, the operation could be done on a financial sectorwide basis that encompasses all commercial banks operating in the country.**<sup>121</sup> In such a case of financial sector crediting, a target trajectory would be defined for the sector as a whole—for example, through adding-up individual targets. Payments would then be provided for overachieving the sectoral target pro rata to the contributions of participating banks. In a sectorwide approach, RBCF would try to catalyze lending practice changes by improving sectoral knowledge and capacity. The following elaborations assume a sectoral approach that has higher transformative potential.

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119 Rewarding or penalizing achievement or underachievement of clean lending targets or portfolio benchmarks is discussed in more detail in A. Stanfield, "The Rise of Green Loans and Sustainability Linked Lending: Where Are We Now?" (Linklaters, London, 2020), [https://lpscdn.linklaters.com/-/media/files/thoughtleadership/green-finance/linklaters\\_the-rise-of-green-loans-and-sustainability-linked-lending-where-are-we-now\\_may-2020.ashx?rev=0ab8a16b-eb65-4dc9-8252-f704a29f0bc2&extension=pdf&hash=5F5F53A60A140E74EC6A7550704EC927](https://lpscdn.linklaters.com/-/media/files/thoughtleadership/green-finance/linklaters_the-rise-of-green-loans-and-sustainability-linked-lending-where-are-we-now_may-2020.ashx?rev=0ab8a16b-eb65-4dc9-8252-f704a29f0bc2&extension=pdf&hash=5F5F53A60A140E74EC6A7550704EC927).

120 This builds on a broad set of proven greenhouse gas accounting methodologies. About 300 such methodologies were developed under the United Nations Framework Convention on Climate Change (UNFCCC) alone (for carbon market mechanisms) and are publicly available. In addition, International Financial Institutions (IFIs) have started an initiative to harmonize their GHG accounting. For more detail see UN Climate Change: IFIs: Harmonization of Standards for GHG Accounting, <https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting>.

121 In addition, measures to avoid international leakage might be required.

**Some commercial banks globally have started using portfolio rewards in their lending policies.** With so-called Sustainability Linked Loans (SLLs), these banks have agreed with their corporate borrowers on green portfolio targets. If these targets are reached, the loan rates will be lowered by an agreed discount. An example could be a corporation's target to reduce its carbon footprint from 10 million tCO<sub>2</sub>e to 6 million tCO<sub>2</sub>e. Once the target is reached, the interest on all loans the bank provides to this corporation will be reduced by 10 basis points. Such voluntary action by commercial banks is at an early stage but has nevertheless already reached some visible size. The overall volume of SLLs reached US\$122 billion in 2019.<sup>122</sup>

**The rationale for rewarding financial sector green lending portfolio targets through results-based payments is not to pay for a potential cost differential between high-carbon and green lending.** Instead, the purpose is to *incentivize a change process in institutional practice that can be expected to be self-financing*. The intention is to help FIs learn to take better advantage of green lending opportunities and better understand the climate-related risks of high-carbon lending. What is being paid for by a program like RBCF is better awareness, knowledge, and capacity related to the climate-impacts dimension of banking. Experiences with such approaches have shown that change processes can be incentivized with relatively low incentive payments that flow directly into the administrative budgets of FIs, without any earmarking for particular usages or purposes.

## Carbon Finance or RBCF Use Case for Greening the Financial Sector: A Sectoral Soft Loan Program for Green Buildings

**This use case is focused on the example of soft loans for energy-efficient building renovation** (renovations to upgrade the energy efficiency of buildings). A soft loan program for energy-efficient building renovation is a proven approach to generating large-scale emission reductions and transforming a significant sector of the economy. An example is the German KfW energy-efficient building refurbishment program, which has been in existence for almost 20 years. KfW, a state-owned German domestic development bank, provides below-market refinancing and public subsidies to commercial banks for standardized green building loans to private households in Germany. This on-lending system has reached millions of homes and achieved substantial contributions to Germany's greenhouse gas mitigation goals. Achieved emission reductions are estimated using a modeling approach based on individual project data collected from the borrowing households.<sup>123</sup>

**Beyond their impact in the housing sector, such programs have transformational potential in the financial industry by growing awareness, understanding, and capacity for green building projects at all participating commercial banks.** Typically, interest rate subsidies can remain relatively low since the payback periods of green building projects are short owing to energy savings, and the projects fit into regular renovation cycles. In a developing country context, carbon finance or RBCF payments for verified emission reductions can be deployed to fund the required loan-softening. Often, energy-saving building renovation investments come with short payback periods due to substantial energy bill savings.

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122 For more detail see: World Bank, *Mobilizing Private Finance for Nature* (Washington, DC: World Bank, 2020), <http://pubdocs.worldbank.org/en/916781601304630850/Finance-for-Nature-28-Sep-web-version.pdf>; and Loan Market Association (LMA) "Sustainability Linked Loan Principles" (LMA, 2019), <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/LMASustainabilityLinkedLoanPrinciples-270919.pdf>.

123 For more detail see KfW, energy-efficient refurbishment: <https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilie/>

**Table 11.2: Action plan**

Milestone/Actions		2023		2024		2025		2026		2027		2028	
		Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	Half 1	Half 2	
<b>FACILITATING GREEN FINANCE MOBILIZATION IN JORDAN'S FINANCIAL SECTOR</b>													
<b>Address informational gaps</b>													
<b>National Green Taxonomy</b>													
1.	Together with MOENV, MOF, and other authorities, establish a national Steering Committee or a Working Group for the development of a National Green Taxonomy.												
2.	Dedicate CBJ's staff to be core members of the Steering Committee or a Working Group for the development of a National Green Taxonomy.												
3.	Colead the development of a National Green Taxonomy.												
4.	Officially endorse the final National Green Taxonomy.												
<b>Green Credit Bureau</b>													
5.	Engage with CRIF Jordan to explore the possibility of complementing CRIF's current credit information system with credit-relevant attributes linked to climate-related, environmental, and social aspects.												
6.	Depending on the outcome of consultations with CRIF, either cooperate with CRIF to operationalize the Green Credit Bureau or consider advancing CBJ's credit registry to include ESG attributes.												
7.	Cooperate with MOENV to connect the Green Credit Bureau to the MRV system.												
<b>Assessment and monitoring of green finance flows in the financial sector</b>													
8.	Adopt a comprehensive official definition of green finance, which will be updated and fully aligned with the National Green Taxonomy once it is adopted.												
9.	As an extension to the initial guided self-assessment of FIs, conduct a comprehensive assessment of the share of green finance in Jordan's financial sector (banks, MFIs, and insurance companies, following a proportionality principle) and officially adopt the criteria and process for regular monitoring.												
<b>Level the playing field for green finance products and services</b>													
<b>Green Loan Framework</b>													
10.	Develop the draft Green Loan Framework that includes: green loan definition; loan origination process; minimum precontractual information; principles for product governance and consumer protection; the proportionality principle; and differentiation between large-scale and retail green loans.												
11.	Conduct a public consultation on the draft Green Loan Framework.												
12.	Incorporate the feedback and officially adopt the Green Loan Framework.												
<b>Guidelines for development of green finance products and services</b>													
13.	Initiate market dialogue with financial institutions to get their feedback on the draft Guidelines for Green Finance Products and Services, which include Islamic green finance as its integral part.												
14.	Issue guidelines to financial institutions on green finance products and services, which include key design features, governance aspects, criteria for alignment with the taxonomy, supervisory treatment, and so on.												
<b>Promote development of climate-related insurance and disaster risk finance products</b>													
15.	Integrate climate risk insurance products, including green Takaful products, in the CBJ's Guidelines for Green Finance Products and Services.												
16.	In cooperation with other authorities, contribute to the financial protection gap analysis to assess the status of financial preparedness of Jordan for disasters and crises.												
17.	Support the implementation of national efforts in the disaster risk area through conducting the climate risk assessment for the financial sector, developing climate risk modelling tools, and improving data availability and granularity.												



<b>FIs' transition and adaptation plans</b>												
18.	Conduct market dialogue and consultation on the timeline, scope, and granularity of potential transition and adaptation plans.											
19.	Convene a multistakeholder exchange to consider sectoral measures to scale up transition and adaptation financing.											
20.	Prepare the draft supervisory guidance on transition and adaptation plans and launch a consultation with FIs.											
21.	Adopt proportional regulatory requirements for FIs to develop and implement transition and adaptation plans.											
<b>Promote development of green finance de-risking instruments</b>												
22.	Blended finance: conduct awareness raising with FIs on the opportunities to leverage in green blended finance structures; clarify the complexity and risk treatment of different blended finance structures; leverage CBJ's initiatives linked to addressing data gaps to provide systematic climate-related financial data that could benefit the design and pricing of blended financing projects.											
23.	Encourage JLGCC to (a) adopt a roadmap or strategy for greening the JLGCC's operational model and programs; (b) conduct a stock-take of existing programs to identify entry points for integrating climate-related aspects; and (c) launch a financially sustainable green guarantee program.											
<b>Promote technology-enabled innovations in green finance</b>												
24.	Initiate market dialogue with Fintech companies operating in Jordan to identify key opportunities in leveraging technology enabled innovations to facilitate green finance in Jordan.											
25.	As a result of the previous step, issue a note describing green fintech opportunities in Jordan.											
26.	Review the work that has been done in designing the Digital Finance Platform for Clean Energy, to leverage it for potential broader digital green finance solutions.											
<b>Foster partnerships to facilitate development of the green finance market</b>												
<b>Facilitate development of green capital market instruments</b>												
27.	In accordance to CBJ's mandate, contribute to the development of detailed regulations on green bond and green sukuk issuance to specify issuance procedures, qualification criteria, use of proceeds, disclosure, and reporting.											
28.	Facilitate dialogue with FIs on issuing green bonds and other labeled capital market instruments.											
29.	Participate in a MOF working group on preparing and issuing the first sovereign green bond in Jordan.											
30.	In partnership with JSC, SSIF, and other authorities and institutional investors, analyze potential enablers to attract more institutional investors to Jordan with a green finance focus.											
<b>Initiate a National Platform or Taskforce for Green Finance Mobilization</b>												
<b>Integrate climate-related considerations into CBJ's other activities and mandates</b>												
<b>Include climate-related considerations in CBJ's reserve management</b>												
31.	Run strategic discussions within CBJ to agree on the potential scope and sequencing of SRI strategy and appetite to integrate sustainability and climate-related considerations into CBJ's reserve management activities.											
32.	Take initial steps and explore green investment opportunities such as high-grade green bonds, as part of CBJ's reserve management.											
33.	Based on the agreed scope, implement the SRI strategy for CBJ's reserve management.											

<b>Include climate-related considerations in the monetary policy framework</b>											
34.	Run strategic discussions within CBJ to agree on the potential scope and sequencing of climate-related considerations for CBJ's monetary policy framework.										
35.	Linked to the climate risk assessment for the financial sector, review CBJ's existing macroeconomic models to identify how best to integrate climate-related factors. In case existing models cannot be complemented, consider developing new ones that can better reflect potential climate change effects.										
36.	Based on the agreed scope and sequencing, explore the possibility to explicitly integrate the climate-related factors into CBJ's monetary policy toolkit.										
<b>Monetize emission reductions from carbon finance or results-based climate finance</b>											
37.	Develop and adopt an internal roadmap/policy to set out the main principles of CBJ's level and type of engagement in carbon finance or RBCF activities in Jordan.										
38.	Initiate signing of a memorandum of understanding or a similar agreement between the CBJ, MOF, and MOENV, and possibly other authorities, to agree on the terms of cooperation and coordination in the carbon finance and RBCF area.										
39.	Screen all policies and regulations under this strategy to assess their potential to mobilize carbon finance or RBCF.										
40.	Develop and issue guidelines for financial sector participants explaining the core mechanisms behind carbon finance and RBCF and how banks, MFIs, insurers, or other financial institutions in Jordan could facilitate mobilizing carbon finance or RBCF.										
41.	Based on the analysis and agreements in previous steps, implement carbon finance or RBCF for selected CBJ green finance initiatives/policies.										

Source: Original table for this strategy.

Note: CBJ = Central Bank of Jordan; ESG = environmental, social, and governance; FI = financial institution; JLGC = Jordan Loan Guarantee Corporation; JSC = Jordan Securities Commission; MFI = microfinance institution; MOENV = Ministry of Environment; MOF = Ministry of Finance; MRV = monitoring, reporting, and verification; MSMEs = micro, small, and medium enterprises; RBCF = results based climate finance; SRI = socially responsible investing; SSIF = Social Security Investment Fund; TA = technical assistance.







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وحدة دعم تنفيذ  
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REFORM SECRETARIAT

